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TRANSACTIONS

Augusta Board
OF THE



Maine State Pomological Society,

FOR THE YEAR

1882.

Including the Proceedings of the Winter Meeting held at Waterville,
January 30 and 31, 1883.



AUGUSTA:

PRINTED AT THE KENNEBEC JOURNAL OFFICE.

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ACT OF INCORPORATION.

STATE OF MAINE.

IN THE YEAR OF OUR LORD ONE THOUSAND EIGHT HUNDRED AND SEVENTY-THREE.

An Act to Incorporate the Maine State Pomological Society.

Be it Enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION 1. Z. A. Gilbert, George W. Woodman, A. L. Simpson, George B. Sawyer, J. C. Weston, Charles Pope, Samuel Rolfe, James A. Varney, Albert Noyes, Rufus Prince, J. C. Madigan, S. F. Perley, Hannibal Belcher, J. B. Phillips, Joseph Taylor, Harvey Counce, John Currier, William Swett, Henry McLaughlin, Calvin Chamberlain, Washington Gilbert, George O. Weston, Hiram Chase, J. C. Talbot and S. L. Goodale, their associates and successors, are hereby constituted a corporation for the promotion of fruit culture, by the name of THE MAINE STATE POMOLOGICAL SOCIETY.

SEC. 2. Said society shall have all the rights, privileges and powers conferred by the laws of this State upon county and local agricultural societies, and shall be subject to all liabilities imposed by existing laws upon such societies, so far as the same are applicable to the objects of this society; but the bounty to be paid by the State to said society shall not exceed the sum of five hundred dollars in one year.

SEC. 3. Said society shall have power to elect such officers, and adopt such by-laws and regulations, not inconsistent with the laws of this State, as may be necessary to carry into effect the objects of the society.

SEC. 4. The first meeting of said society may be called by A. L. Simpson, J. C. Weston and Geo. B. Sawyer, by a notice signed by them, stating the time and place of said meeting, to be published two weeks successively in the Maine Farmer, the last publication to be seven days at least before the time of said meeting.

SEC. 5. This act shall take effect when approved.

[Approved February 17, 1873.]

By-Laws, as Amended January 29, 1874.

ARTICLE I.—MEMBERSHIP.

SECTION 1. Any person may become a member of this Society by signifying his wish to do so and paying to the Treasurer the sum of one dollar.

SEC. 2. Any person may become a life member by paying the Treasurer the sum of ten dollars; and the Treasurer's certificate thereof shall entitle such member, with his wife and minor children, to admission to all the exhibitions of the Society.

SEC. 3. Each member (excepting life members,) shall pay to the Treasurer an annual fee of one dollar; and the Treasurer's certificate thereof shall entitle him to admission to all the exhibitions of the Society for that year.

SEC. 4. Any member who shall neglect, for the term of two years, to pay his annual assessment, shall cease to be a member of the Society; and the Treasurer shall erase his name from the list of members. Any member may, at will, withdraw from the Society on giving notice to the Treasurer, and paying the amount due from him to the Society.

SEC. 5. Ten members shall constitute a quorum.

ARTICLE II.—OFFICERS.

SECTION 1. The officers of the Society shall consist of a President, two Vice Presidents, Secretary, Corresponding Secretary, Treasurer, and an Executive Committee, consisting of three members exclusive of the President and Secretary, who shall be members *ex-officio*, and one Trustee for each county in the State; all of whom shall be elected by ballot at the annual meetings, and hold their respective offices during the calendar year for which they shall be elected, and until their successors are elected. In the event of a failure to elect the said officers, or any of them, at such meeting, an election shall be held at the next meeting of the Society duly called and holden.

SEC. 2. All the officers shall perform the customary duties of their respective offices, and such further duties as are herein specified or shall from time to time be imposed upon them.

SEC. 3. The Secretary shall keep a true record of the proceedings of the Society and of the Executive Committee, keep an alphabetical list of the members, and make all reports required or authorized by law.

SEC. 4. The Corresponding Secretary shall conduct the correspondence of the Society. He shall open and maintain correspondence with other Pomological and Horticultural Societies for the purpose of effecting an exchange of publications with the same, for the permanent use of this Society; and shall present at each annual meeting, a report, embracing a review of the proceedings of such Societies, and the substance of all such matters therein as he shall deem to be of special interest to this Society.

SEC. 5. The Treasurer shall keep all moneys of the Society and disburse the same only upon the written orders of the Executive Committee. He shall render his accounts annually to the Executive Committee, and give such bond as said Committee may require. He shall keep a record of the names of the members of the Society, and shall from time to time transmit to the Secretary the names of all new members and of such persons as have ceased to be members.

SEC. 6. The Executive Committee shall have the general management and oversight of the affairs of the Society; transact its business, and appoint all standing and special committees, when not otherwise provided for; examine the accounts of the Treasurer, and make an annual report to the Society, of their doings and of the financial affairs of the Society.

SEC. 7. The Trustees shall represent the Society and act as its agents in their respective counties. They may receive applications for membership, and forward the same, with the fees therefor, to the Treasurer, and shall promote the interest of the Society in their respective counties.

SEC. 8. Whenever the office of President shall become vacant, the Vice Presidents shall succeed to his office, in the order of seniority, for the remainder of the year; and any vacancy occurring in any other office may be filled by appointment by the Executive Committee; the person so appointed holding the office for the remainder of the year.

ARTICLE III.—MEETINGS.

SECTION 1. The Annual Meetings of the Society shall be held at the place and during the time of the Annual Autumn State Exhibition, and such notice thereof shall be given as the Executive Committee shall direct. If, from any cause, the regular Annual Meeting shall not be held as above provided, a special meeting shall be held at Augusta in the month of January next following.

SEC. 2. Special meetings may be called at any time by the Executive Committee; of which meetings each member shall be notified, by a notice properly directed and deposited in some post office at least ten days prior to the time of such meeting.

ARTICLE IV.—FUNDS.

The fees for life membership shall constitute a permanent fund, to be safely invested by the Treasurer under the direction of the Executive Committee, and of which only the interest shall be used for the disbursements of the Society.

ARTICLE V.—AMENDMENTS.

These By-Laws, except Sec. 2 of Article 1, may be altered or amended at any annual meeting of the Society, by the concurrence of two-thirds of the members present; *provided, however*, that Article 4 shall not be so amended without notice given and entered on record at the preceding Annual Meeting.

MEMBERS OF THE SOCIETY.

NOTE.—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full christian names where initials only are given.

LIFE MEMBERS.

Andrews, A. Emery	Gardiner	Low, S. S.	Bangor
*Atherton, H. N.	Hallowell	McLaughlin, Henry	Bangor
Atherton, W. P.	Hallowell	Metcalf, M. J.	Monmouth
Atkins, Charles G.	Bucksport	Moore, William G.	Monmouth
Atwood, Fred.	Winterport	Moor, F. A.	Waterville
Bennoch, John E.	Orono	Morton, Will. E.	Allen's Corner
Burr, John.	Freeport	*Noyes, Albert.	Bangor
Carter, Otis L.	Etna	Perley, Chas. I.	Seward's, (Vassalboro')
Chase, Henry M.	North Yarmouth	Pope, Charles S.	Manchester
Chase, Martin V. B.	Augusta	Pulsifer, D. W.	Poland
Clark, Eliphalet.	Portland	Richards, F. G.	Gardiner
Crafts, Moses.	Auburn	Richards, John T.	Gardiner
*Crosby, William C.	Bangor	Richardson, J. M.	Greene
Dana, Woodbury S.	Portland	Roak, George M.	Auburn
DeRocher, Peter.	Waterville	Robinson, H. A.	Foxcroft
Dirwanger, Joseph A.	Portland	Rolfe, Samuel.	Portland
Dyer, Milton.	Cape Elizabeth	Sawyer, Andrew S.	Cape Elizabeth
Emerson, Albert.	Bangor	Sawyer, George B.	Wiscasset
Farnsworth, B. B.	Portland	Shaw, Stillman W.	Minot
Frost, Oscar F.	Monmouth	Simmons, H. J. A.	Waldoboro'
Gardiner, Robert H.	Gardiner	Smith, Alfred.	Monmouth
Gilbert, Z. A.	East Turner	Smith, Henry S.	Monmouth
Godfrey, John E.	Bangor	Starrett, L. F.	Warren
Hanscom, John.	Saco	Stetson, Isaiah.	Bangor
Harlow, S. C.	Bangor	Stilphen, Asbury C.	Gardiner
*Harris, N. C.	Auburn	Strout, S. F.	West Falmouth
Harris, N. W.	Auburn	Strattard, Mrs. A. B.	Monroe
Hersey, T. C.	Portland	Sweetser, S. R.	Cumberland Centre
Hopkins, Miss S. M.	Gardiner	*Taylor, Joseph.	Belgrade
Hoxie, James S.	North Fairfield	Thomas, William W. Jr.	Portland
Ingalls, Henry.	Wiscasset	Tilton, William S.	Chelsea
Jewett, George.	Portland	True, Davis P.	Leeds Centre
Johnson, Isaac A.	Auburn	Varney, James A.	Oregon
Jordan, Francis C.	Brunswick	Vickery, James.	Portland
Low, Elijah.	Bangor	Vickery, John.	Auburn

* Deceased.

LIFE MEMBERS—*Concluded.*

Wade, Patrick.....	Portland	Whitney, Edward K.....	Harrison
*Weston, James C.....	Bangor	Woodman, George W.....	Portland
Wharff, Charles S.....	Gardiner		

Annual Members, 1882.

Blossom, L. H.....	Turner Centre	Lennan, L., (1883).....	Gardiner
Blanchard, Chas. H....	Cumberland Centre	Merrill, T. M., (1883)...	West Gloucester
Blanchard, Wesley.....	Lewiston	Merrill, Mrs. J. H.....	Auburn
Briggs, D. J.....	South Turner	*Milliken, Joseph L....	Saco
Calef, George F.	Saco	Morse, Miss Nellie.....	Auburn
Carey, H. S.....	Topsham	Mountfort, Otis A	Cumberland Centre
Chipman, A. B.....	West Gloucester	Nelson, E. N.....	Minot
Clark, Edward.....	Lewiston	Nowell, Frank E., (1883).....	Fairfield
Dennett, J. Q.....	Biddeford	Paine, Albert W.....	Bangor
Dill, Seward.....	Phillips	Plaisted, Richard C.....	Gardiner
Dumont, William D....	West Gloucester	Prentiss, A. G.....	Saco
Dunham, W. W.....	North Paris	Remick, Benjamin.....	Saco
Emmons, Willis F.....	Saco	Stanley, Charles.....	Winthrop
Fulton, J. M.	Bowdoinham	Staples, E. W.....	Biddeford
Haskell, Miss Lizzie....	West Gloucester	Staples, G. K.....	Temple
Hobson, Joseph W.....	Saco	Towle, J. J.....	South Carthage
Hooper, D. O. S.....	Biddeford	Wharff, William R.....	Gardiner
Jellerson, C. T.....	Lewiston	Whitmore, Thos. P., (1883)...	Bowdoinham
Lapham, Wm. B., (1883).....	Augusta	Witham, N. D.....	Biddeford
Leavitt, E. N.....	Auburn		

*Deceased.

To the Secretary of the Maine Board of Agriculture :

I have the honor to submit herewith, as required by law, a report of the transactions of the Maine State Pomological Society, for the year 1882. It contains the details of the annual exhibition, the papers read at the winter meeting, with a condensed report of the discussions on the same, and a statement of so much of the "proceedings" of the Society as appear to be of public interest ; together with such notes and observations of my own as seem to be required.

In order to avoid misleading any reader, it is proper to say that the Society assumes no responsibility for the correctness of any theory advanced or of any statement of fact or opinion made in the papers and discussions reported ; but only undertakes to report the same faithfully, omitting in the discussions, as far as practicable, all repetitions, irrelevant and unimportant matters.

GEO. B. SAWYER, *Secretary.*

MAINE STATE POMOLOGICAL SOCIETY.

Transactions for 1882.

The period covered by this report constitutes the tenth year of the Society's existence. The results which have thus far been accomplished have demonstrated the public utility of such an organization. But to establish and develop a comprehensive pomological system, which shall produce tangible results in the bulk and value of our orchard products, is a work which could only be begun in so short a period; it requires ample means and the continuous attention of competent laborers.

At no previous time in the history of the State has there been so much attention given to the planting of new orchards, or to the intelligent care of those previously planted, so earnest and general discussion of the methods of horticultural practice, nor so much sound judgment in the application of principles and practices to the production of definite results as at the present time. Without undervaluing the success of the numerous persons who, years ago, established extensive and profitable orchards in various parts of the State, or the efforts of those who by their writings and public addresses have, during the last half century, earned the distinction of pioneers in the work, it is safe to say that at the time of the formation of this Society the improved art of horticulture, as understood and practiced at the present time, had not taken any considerable hold of the masses of the people. The adaptability of the great central and southern portions of our State to successful fruit culture had been fully demonstrated: with respect to the northern portion it was an open question. (and not yet fully settled.)

The Society found people everywhere buying and planting fruit trees, but in a majority of cases with no conception of the adaptation

of varieties to particular localities or specific purposes. They had no guide but their own fancy or the caprice of the dealer of whom they bought. Where trees of the old standard sorts had failed for the want of proper care, a remedy had been sought in the introduction of some new kind of which marvelous accounts were given. Another evil existing at that time was the confusion in regard to the names of fruits. As the result of all this there were growing in the State an innumerable list of varieties, known and unknown, and many of them worthless or not adapted to the locality or the markets. As a single illustration, there had been planted a great number of trees under the indefinite name of "golden russet," of most of which the fruit was inferior in size and quality. Many farmers had been induced to plant large numbers of crab apple trees, under the belief that there was in them some special source of profit. Men might learn by their own failures, but the process was slow and expensive; and they seldom learned much from the experience of others.

In no department of agricultural labor was there such misapplication of time and money, or such need of an organization to give direction to individual effort and to develop the great possibilities of our situation, as in that of fruit production.

The efforts of the Society have been thus far largely devoted to the elimination of worthless and unprofitable varieties of fruit and the correction of errors in nomenclature, and at no period has more rapid progress been made in this respect than during the last year. At the same time attention has been given to all the varied details of the theory and practice of horticulture, so far as the means at hand would allow. Much has been accomplished, but more remains to be done. While the fundamental principles of fruit culture are the same in all times and places, their adaptation to specific and profitable results is governed mainly by local conditions. All the forces and instrumentalities of nature—the varying conditions of climate, temperature, altitude, atmospheric humidity, rainfall, snow and frost, the influences of animal and insect life, parasitic and fungoid growths, as well as the facilities for transportation and competition in our own and other markets, are to be weighed and considered. Hence every considerable section of the country needs a system of its own, differing in some respects from any other. The extent and diversity of the territory of our own State calls for two distinct pomological systems, neither of which will correspond with that of any other section. To develop these systems and make them a part of the

common intelligence of the people, to banish ignorance, egotism and empiricism, to make ourselves self-reliant and self-supporting in respect to everything in tree or fruit which needs to be purchased, and to open the markets of the world to our productions (which shall be inferior to none), are among the objects of this Society.

Ten annual exhibitions and eight winter meetings have been held by the Society, and the interest has been fully maintained to the present time.

THE SEASON OF 1882

was exceptional in its climatic conditions. The spring was cold and backward, and retarded the blossoming of fruit trees, so that no material damage was done by the spring frosts. A drouth of unusual severity prevailed over nearly the whole State during the months of July and August. A violent gale on the 14th of September, followed by another on the 19th, with high winds from various quarters during the intervening time, blew off fully one-half of the fruit then upon the trees; but the quantity which remained, particularly of apples, was sufficient, with the late growth which resulted from this violent "thinning," and under the influence of favorable autumn weather, to develop an abundant crop, of average quality. The drouth of the summer, while it diminished the size, hastened the development of all the fruits. It gave us the largest and best ripened vintage of out-door grapes ever known in the State; but, with other causes, gave a light crop of pears, which were below the average in quality. Plums were abundant and of good quality, but the heavy and continuous rains from the 21st to 24th of September, destroyed that part of the crop which had not been harvested, and also injured, to a considerable extent, those pears and apples which were about ripening at that time.

THE TENTH ANNUAL EXHIBITION

was held at Lewiston, on the 26th to the 29th days of September, inclusive, and in connection with the annual Fair of the State Agricultural Society. The terms of the arrangement between the two Societies were mutually advantageous, and were carried out in a manner satisfactory to both—the great object being to make the most complete exhibition possible, with the least unnecessary expense.

The saving to our Society of the expense of advertising and all the detailed arrangements of a separate exhibition, and the advantage to the public in being enabled to witness our exhibition in connection with the varied attractions of the State Fair, are matters of great moment. The only considerable disadvantage is the want of space which results from massing at one time the products of so many industries, and this it is hoped will be remedied by more ample accommodations to be provided in the future.

The space assigned to the Pomological Society was the upper hall in the City Building, and it was filled to its utmost capacity; and some packages of fruit designed for exhibition remained unopened. The exhibition by this Society was confined strictly to fruits, flowers and plants. The number of entries was eight hundred and forty, of which 38 were of cut flowers, including collections and single varieties: 37 of bouquets, wreaths, designs, &c., and 32 of greenhouse and pot plants in collections and single specimens; the remainder with the exception of a few miscellaneous articles, being of fruit. Of the latter there were about 1,250 plates, viz:

In collections of apples	570	plates.
Single varieties of apples	344	"
Collections of pears	100	"
Single varieties of pears	78	"
Grapes	150	"
Plums	10	"

It will be seen that the entries were not as numerous, nor the exhibition as extensive, as in some former years; but considering the unfavorable circumstances of the season, and the want of room for more, they were satisfactory. The early ripening fruits as previously remarked, and the flowers, out of doors, had been greatly damaged by the boisterous weather of the preceding ten days; the winter fruit was not fully developed, but was remarkably well colored and free from blemishes. There was a greater preponderance of valuable and standard varieties, and fewer specimens of unknown and inferior sorts, than heretofore. The exhibition of pears was fairly creditable to the State; that of grapes was probably the finest ever made, and the few specimens of plums shown were very good. The flowers were bright and beautiful as ever, and the greenhouse plants were very fine.

The amount of premiums offered was \$975.00, and the amount awarded \$565.50, all of which has been paid.

Further details of the exhibition will appear by the subjoined list of premiums offered and awarded, and of entries made.

THE ANNUAL MEETING OF THE SOCIETY

was held September 28th. pursuant to notice given, but was adjourned to the time and place of the winter meeting, without the transaction of any other than formal business.

The principal officers of the Society for the year 1882. were as follows :

President—HON. R. H. GARDINER, Gardiner.

Vice Presidents—JOSEPH TAYLOR, Belgrade ; STILLMAN W. SHAW, Minot.

Secretary and Treasurer—GEORGE B. SAWYER, Wiscasset.

Corresponding Secretary—GRANVILLE FERNALD, Harrison.

Executive Committee—The President and Secretary, *ex-officio* ; SAMUEL ROLFE, Portland ; HENRY McLAUGHLIN, Bangor ; CHARLES S. POPE, Manchester.

SCHEDULE OF PREMIUMS OFFERED, ENTRIES MADE AND PREMIUMS AWARDED.

[NOTE.—The names of persons to whom premiums were awarded are given first under each specification, with the amount awarded, in ordinary type; and afterwards, in smaller type, the names of other competitors for the same. When the name of a person is repeated his place of residence is omitted.]

CLASS 1 — APPLES.

FIRST DIVISION.

Special Regulations. “Entries for all premiums in this division must consist of five specimens of each variety exhibited, and (except Nos. 18 and 19) of at least twenty correctly named varieties. Entries for premiums Nos. 18 and 19 must be separate and distinct collections, not embracing any other collection or specimens. and in awarding the premiums regard will be had both to the quality of the specimens and the value of the varieties exhibited.

Collection entered for premiums Nos. 2 to 17, may also be entered for No. 1, but in any such case only one premium will be awarded for one collection.

Seedlings and “native fruits” *not named*, or standard varieties “unknown” or incorrectly named, will not be admitted in these collections; but all such specimens will go to the Committees on “new fruits” or “nomenclature.”

By “named varieties” is meant such as are named and described in some standard work on Pomology, or have been named and approved by some National or State Horticultural Society.

In adopting 20 as the number of varieties required in these collections, (1 to 17.) the Society does not intend to encourage the multiplication of varieties: and the committee will be instructed, in awarding the premiums, to have regard to *quality and value* rather than to the number of varieties, and will be authorized to recommend gratuities for meritorious collections embracing less than the number of varieties required as above.”

Premium No. 1. For the best general exhibition of apples, grown by the exhibitor, in any part of the State. Miss L. L. Taylor, Lakeside, (Belgrade,) first premium, \$15.00; S. C. Harlow, Bangor, second premium, \$10.00; R. H. Gardiner, Gardiner, third premium, \$5.00.

2. For the best general exhibition of apples, grown by the exhibitor, in Androscoggin county. J. M. Richardson, Greene, \$10; D. J. Briggs, South Turner, \$8; N. W. Harris, Auburn, \$5.

3. For the same in Aroostook county. No entry.
4. For the same in Cumberland county. S. R. Sweetser, Cumberland Centre, \$10.
5. For the same in Franklin county. G. K. Staples, Temple, \$8.
6. For the same in Hancock county. No entry.
7. For the same in Kennebec county. J. Pope & Son, Manchester, \$10; Perley & Perkins, Seward's. (Vassalboro',) \$8.
8. For the same in Knox county. No entry.
9. For the same in Lincoln county. H. J. A. Simmons, Waldo-boro', \$10; George B. Sawyer, Wiscasset, \$8.
10. For the same in Oxford county. J. J. Towle, Dixfield, \$10.
11. For the same in Penobscot county. J. E. Bennoch, Orono, \$10.
12. For the same in Piscataquis county. No entry.
13. For the same in Sagadahoc county. H. S. Carey, Topsham, \$10; James M. Fulton, Bowdoinham, \$8.
14. For the same in Somerset county. James S. Hoxie, Fairfield, \$10.
15. For the same in Waldo county. Mrs. A. B. Strattard, Monroe, \$10.
16. For the same in Washington county. No entry.
17. For the same in York county. No entry.
18. For the best five named varieties of Autumn apples. S. R. Sweetser, \$3; H. J. A. Simmons, \$2; J. E. Bennoch, \$1.
Miss L. L. Taylor, R. H. Gardiner, Alfred Smith, Monmouth; S. C. Harlow, D. P. True, Leeds Centre.
19. For the best five named varieties of Winter apples. S. C. Harlow, \$3; Alfred Smith, \$2; D. P. True, \$1.
L. L. Taylor, H. J. A. Simmons, R. H. Gardiner, H. S. Carey, J. E. Bennoch, N. W. Harris, S. R. Sweetser.
20. For the best collection of apples for home use, for the entire year, in the smallest number of varieties. S. R. Sweetser, \$5; D. P. True, \$3; H. J. A. Simmons, \$2.
J. E. Bennoch.
21. For the best collection of Crab Apples, not less than five varieties. J. S. Hoxie, \$2; S. C. Harlow, \$1; J. J. Towle, *gratuity*, 50 c.
Perley & Perkins.

SECOND DIVISION.

“Entries for premiums in this division must consist of from five to ten specimens, according to size, of each variety exhibited, and must be separate specimens from any exhibited in the first division.”

22. For best single variety of autumn apples. S. R. Sweetser, (Gravenstein,) \$2; Miss L. L. Taylor, (Somerset,) \$1.

Simmons, Briggs, Smith, Harlow, Perley & Perkins, True, Bennoch.

23. For the best single variety of winter apples. S. R. Sweetser, (Northern Spy,) \$2; S. C. Harlow, (King of Tompkins County,) \$1.

Miss Taylor, Simmons, Briggs, True, Bennoch.

24. For the best dish of Alexander. J. E. Bennoch, \$1; Miss L. L. Taylor, 50 c.

C. A. Day, Turner; T. M. Merrill, West Gloucester; Harlow, Perley & Perkins; Peter De Rocher, Waterville.

25. American Golden Russets. Entries were made in the class of “special exhibition of russets.”

26. Baldwins. S. R. Sweetser, \$1; Miss L. L. Taylor, 50 c.

Simmons, Richardson, Gardiner, Bennoch, Smith, Harlow, Perley & Perkins; John Dunton, Lewiston; Edward Clark, Lewiston; A. B. Chipman & Son, West Gloucester; Mrs. M. L. Robbins, Winthrop; S. W. Shaw, Minot.

27. Benoni. S. R. Sweetser, \$1; Mrs. A. B. Strattard, 50 c.

Bennoch, Gardiner.

28. Black Oxford. L. H. Blossom, Turner, \$1; J. M. Richardson, 50 c.

Mrs. Robbins, Bennoch, Perley & Perkins.

29. Blue Pearmain. J. Pope & Son, \$1; Miss L. L. Taylor, 50 c.

Simmons, Richardson, Gardiner, Bennoch, Smith; C. T. Jellerson, Lewiston.

30. Briggs' Auburn. Miss L. L. Taylor, \$1.

31. Cole's Quince. Entry by J. E. Bennoch, but not found by the committee.

32. Danvers Winter Sweet. Perley & Perkins, \$1; S. W. Shaw, 50 c.

Miss Taylor, True.

33. Dean. (*Nine ounce.*) Miss L. L. Taylor, \$1; J. Pope & Son, 50 c.

Bennoch, Towle.

34. Duchess of Oldenburgh. S. R. Sweetser, \$1; S. C. Harlow, 50 c.

Simmons, Dunton, Bennoch, Harris, Hoxie, Towle, True, Mrs. Strattard, Sawyer; Nelson S. Albee, Dennysville; I. T. Waterman, Auburn.

35. Early Harvest. Mrs. A. B. Strattard, \$1; H. J. A. Simmons, 50 c.

Harlow.

36. Early Strawberry. Entries were made by Miss Taylor and Hannah Davis, West Gloucester, but the committee reported that they were not true to name.

37. English Russet. (*Poughkeepsie Russet*.) Entries by Simmons, Smith, Perley & Perkins, and De Rocher, but no premiums awarded.

38. Fall Harvey. Miss L. L. Taylor, \$1; C. A. Day, 50 c.
Richardson, Gardiner, Bennoch, True.

39. Fameuse. Peter De Rocher, \$1; Alfred Smith, 50 c.
Simmons, Clark, Gardiner, Bennoch, Harris, Mrs. Strattard.

40. Franklin Sweet. Perley & Perkins, \$1; Alfred Smith, 50 c.
Richardson, Miss Taylor.

41. Garden Royal. No entry.

42. Golden Russet. (*English Golden Russet*.) Entry by Perley & Perkins, but no premium awarded.

43. Gravenstein. S. R. Sweetser, \$1; N. W. Harris, 50 c.

Miss Taylor, Simmons, Richardson, Clark, Hannah Davis, Chipman & Son, Gardiner, Smith, True, Jellerson, Shaw; E. N. Nelson, Minot.

44. Hightop Sweet. Z. A. Gilbert, East Turner, \$1; L. H. Blossom, 50 c.

Simmons, Bennoch, Harlow.

45. Hubbardston Nonsuch. Perley & Perkins, \$1; Miss L. L. Taylor, 50 c.

Richardson, Clark, Mrs. Robbins, Bennoch, Smith.

46. Hunt Russet. (*Golden Russet of Mass.*) Entries by Mrs. Strattard and George H. Pope, West Gardiner, but no premium awarded.

47. Hurlbut. H. J. A. Simmons, \$1.

Entry by H. S. Carey, "not true to name."

48. Jewett's Fine Red. (*Nodhead*.) Perley & Perkins, \$1; Miss L. L. Taylor, 50 c.

Richardson, Mrs. Robbins, Bennoch, Smith.

49. King of Tompkins County. S. W. Shaw, \$1; S. R. Sweetser, 50 c.

Miss Taylor, Sawyer, Dunton, Clark, Hannah Davis, Chipman & Son, Mrs. Robbins, Bennoch, Smith.

50. King Sweeting. Miss L. L. Taylor, \$1; J. S. Hoxie, 50 c.
Richardson, Smith, Perley & Perkins.

51. Large Yellow Bough. S. W. Shaw, \$1; Perley & Perkins, 50 c.

True, Sweetser, Bennoch, Gardiner, Sawyer.

52. Minister. J. Pope & Son, \$1.

53. Moses Wood. Miss. L. L. Taylor, \$1; Perley & Perkins, 50 c.

Gardiner, Pope & Son.

54. Mother. Miss L. L. Taylor, \$1; J. M. Richardson, 50 c.

Gardiner, Bennoch.

55. Naked-limbed Greening. Mrs. A. B. Strattard, \$1; S. C. Harlow, 50 c.

Smith, True.

56. Northern Spy. Miss L. L. Taylor, \$1; Perley & Perkins, 50 c.

Simmons, Richardson, Clark, Hannah Davis, Gardiner, Chipman & Son, Mrs. Robbins, Bennoch, Fulton, Harris, Smith, Sweetser.

57. Orange Sweet. J. S. Hoxie, \$1; H. J. A. Simmons, 50 c.

58. Peck's Pleasant. J. J. Towle, \$1; J. Pope & Son, 50 c.

59. Pomme Royale. No entry.

60. Porter. Charles H. Blanchard, Cumberland Centre, \$1; S. W. Shaw, 50 c.

Miss Taylor, Simmons, Richardson, Dunton, Clark, Gardiner, Hannah Davis, Mrs. Robbins, Bennoch, Day, Smith, Sweetser, Towle.

61. President. L. H. Blossom, \$1.

62. Primate. No entry.

63. Pumpkin Sweet. S. C. Harlow, \$1.

Gardiner, Bennoch, Smith, Nelson. "Second premium not awarded on account of specimens not being true to name."

64. Red Astrachan. J. J. Towle, \$1; J. S. Hoxie, 50 c.

Simmons, Sawyer, Harris, Harlow, Perley & Perkins, Mrs. Strattard.

65. Red Canada. Alfred Smith, \$1; R. H. Gardiner, 50 c.

Richardson.

66. Rhode Island Greening. S. R. Sweetser, 1; Perley & Perkins, 50 c.

Miss Taylor, Simmons, Richardson, Dunton, Clark, Gardiner, Smith, True, Jellerson.

67. Rolfe. (*Macomber*.) No entry.

68. Roxbury Russet. Alfred Smith, \$1; Edward Clark, 50 c.

Miss Taylor, Richardson, Gardiner, Mrs. Robbins, Bennoch, True, Shaw.

69. Sops of Wine. (*Bell's Early*.) Alfred Smith, 1; S. C. Harlow, 50 c.

Miss Taylor, Simmons, Sawyer, Bennoch, Perley & Perkins.

70. Somerset. Miss L. L. Taylor, \$1; J. E. Bennoch, 50 c.

Simmons, Smith, Sweetser.

71. Starkey. Perley & Perkins, \$1; J. Pope & Son, 50 c.

Sawyer.

72. Talman's Sweet. N. W. Harris, \$1; Edward Clark, 50 c.
Miss Taylor, Richardson, Gardiner, Mrs. Robbins, Bennoch, Smith, Sweetser, Perley & Perkins, True. "All splendid specimens."
73. Tetofsky. Mrs. A. B. Strattard, \$1.
74. Wagener. N. W. Harris, \$1; H. J. A. Simmons, 50 c.
Harlow.
75. Williams' Favorite. J. S. Hoxie, \$1; Miss L. L. Taylor, 50 c.
Simmons, Bennoch, Smith, Mrs. Strattard.
76. Winthrop Greening. J. Pope & Son, 1; Alfred Smith, 50 c.
Miss Taylor, Sawyer, Richardson, Gardiner, True.
77. Yellow Bellflower. R. H. Gardiner, \$1; John Dunton, 50 c.
Miss Taylor, Simmons, Clark, Bennoch, Mrs. Strattard.
78. Crab Apples. J. S. Hoxie, \$1; S. C. Harlow, 50 c.
Simmons, Clark, Waterman, Gardiner, Smith, True, De Roher.

SUNDRIES. Edward Clark, Beauty of Kent, *gratuity*, 50 c.; Hannah Davis, Summer Pearmain, Pound Sweet, New York Stripe; Z. A. Gilbert, Milding, *gra.*, 50 c.; J. M. Richardson, Pound Sweet, Fall Jenneting, Carlton, White Jenneting; G. B. Sawyer, Ontario, *gra.*, 50 c.; R. H. Gardiner, Fairbanks, Sweet Golden Pippin, *gra.*, 50c; Gloria Mundi, Hubbardton Pippin, Strawberry, Fall Pippin, Ribston Pippin, *gra.*, 50c; Jersey Sweet, Winter Pearmain, *gra.*, 50c.; Spitzenburg; A. B. Chipman & Son, Golden Ball; John Dunton, Ben Davis, Lady; James M. Fulton, Wealthy, *gra.*, \$1; T. S. McLellan, Brunswick, same, *gra.*, 50c.; J. E. Bennoch, same; C. A. Day, Autumn Strawberry, *gra.*, 50 c.; J. M. Richardson, Gloria Mundi of Maine, *gra.*, 50 c.; D. J. Briggs, Ben Davis, Swaar, White Rambo, *gra.*, 50 c.; Winter Sweet, Smith's Cider, Sweet Nonsuch, Mammoth Pippin; J. J. Towle, Fall Pippin, *gra.*, 50 c.; S. W. Shaw, Fall Jenneting, *gra.*, 50 c.; Beefsteak.

"Special Exhibition of Russets."

"With a view to the settlement of numerous doubts and controversies respecting this class of apples, the Society invites contributions of the varieties of russets grown in the State, five specimens of each variety, named as correctly as may be, for comparison. A special committee will be appointed to consider the same, and authorized to recommend reasonable gratuities for any variety or collection deserving such recognition."

Under this class there were, besides the entries of the various kinds of russets before mentioned, entries as follows: J. J. Towle, 8 varieties; G. B. Sawyer, 3 varieties; John Dunton, 2 varieties; I. T. Waterman, R. H. Gardiner, Perley & Perkins, S. W. Shaw

and Henry Ingalls, one variety each. The specimens presented a great diversity in form, size, color and quality, and were examined with much interest; but, with a few exceptions, they were not sufficiently advanced in developement to justify an estimate of their merits, and the subject was postponed to the Winter Meeting.

CLASS 2 — PEARS.

“Entries for premiums Nos 79, 80, and 81, must consist of five specimens of each variety exhibited.”

79. For best general exhibition of pears. Samuel Rolfe, Portland, \$12; A. B. Chipman & Son, \$8; Alfred Smith, \$5; D. P. True, \$3.

80. For best five named varieties of autumn pears.

Alfred Smith, D. P. True. Premiums not awarded.

81. For best five named varieties of winter pears. No entry.

“Entries for premiums Nos. 82 to 110, inclusive, must consist of five to ten specimens, according to size, of each variety exhibited.”

82. For best single variety of fall pears. Alfred Smith, \$2; D. P. True, \$1.

83. For the best single variety of winter pears. No entry.

84. For the best dish of Bartlett. Albion Ricker, Turner, \$1; E. N. Nelson, 50 c.

E. N. Leavitt, Auburn; Smith, Jellerson.

85. Belle Lucrative. S. C. Harlow, \$1; E. N. Nelson, 50 c. Sawyer, Gardiner, Smith.

86. Beurre d'Anjou. Alfred Smith, \$1; G. B. Sawyer, 50 c.

87. Beurre Bosc. No entry.

88. Beurre Hardy. R. H. Gardiner, \$1.

89. Beurre Superfin. D. P. True, \$1.

90. Beurre Clairgeau. G. B. Sawyer, \$1.

91. Beurre Diel. G. B. Sawyer, \$1; D. J. Briggs, 50 c.

92. Buffum. E. N. Nelson, \$1; D. P. True, 50 c.

93. Clapp's Favorite. E. N. Nelson, \$1; G. B. Sawyer, 50 c. Clark, Gardiner.

94. Doyenne Bonssock. No entry.

95. Duchess d'Angoulenne. A. B. Chipman & Son, \$1; Alfred Smith, 50 c.

D. P. True.

96. Flemish Beauty. Edward Clark, \$1 ; S. R. Sweetser, 50 c.
Briggs, Gardiner, Ricker, Smith, Miss Taylor, Nelson, True, Perley & Perkins.
97. Fulton. Perley & Perkins, \$1.
98. Glout Morceau. No entry.
99. Goodale. Perley & Perkins, \$1.
100. Howell. Alfred Smith, \$1 ; E. N. Nelson, 50 c.
Gardiner, True.
101. Josephine de Malines. No entry.
102. Lawrence. Miss L. L. Taylor, \$1 ; E. N. Nelson, 50 c.
Jellerson.
103. Louise Bonne de Jersey. E. N. Nelson, \$1 ; Alfred Smith,
50 c.
Briggs, Leavitt, True.
104. Marie Louise. No entry.
105. Seckel. C. T. Jellerson, \$1 ; E. N. Nelson, 50 c.
Briggs.
106. Sheldon. Edward Clark, \$1 ; Miss L. L. Taylor, 50 c.
Briggs, Leavitt, Smith, Nelson.
107. Swan's Orange. Alfred Smith, \$1.
108. Urbaniste. G. B. Sawyer, \$1.
109. Vicar of Wakefield. A. B. Chipman & Son, \$1 ; E. N. Nelson,
50 c.
D. P. True.
110. Winter Nelis. E. N. Leavitt, \$1 ; R. H. Gardiner, 50 c.
- SUNDRIES. G. B. Sawyer, Ott ; R. H. Gardiner, Napoleon, *gracuity*, 50 c. ; Miss L. L. Taylor, Nickerson, *gra*, 50 c. ; Perley & Perkins, Nickerson, *gra*, 50 c. ; seedling ; S. C. Harlow, Indian Queen, *gra.*, 50 c. ; Edward Clark, small, yellow pear, unknown.

CLASS 3—GRAPES.

- 111 For best exhibition of foreign grapes, grown with fire heat.
John C. Baker, Lewiston, \$10 ; John Vickery, Auburn, \$8.
112. For best exhibition of foreign grapes, grown in cold grapery.
G. B. Sawyer, \$8 ; John Burr, Freeport, \$5.
113. For best cluster Black Hamburgh. John Vickery, 1 ; G. B. Sawyer, 50 c.
Baker, Burr.
114. Wilmot's Hamburgh. G. B. Sawyer, \$1 ; John Burr, 50 c.
115. Victoria Hamburgh. John Burr, \$1 ; G. B. Sawyer, 50 c.
116. White Frontignan. No entry.

117. Grizzly Frontignan. No entry.
118. White Muscat. No entry.
119. Muscat Hamburg. G. B. Sawyer, \$1.
120. White Chasselas G. B. Sawyer, \$1; John Burr, 50 c.
121. Lady Downes No entry.
122. Buchland Sweet Water. No entry.
123. Trentham Black. G. B. Sawyer, \$1.
124. West's St Peters. No entry.
125. White Nice. John Burr, \$1.
126. Red Chasselas John C. Baker, \$1; G. B. Sawyer, 50 c.
127. Chasselas Musque. G. B. Sawyer, \$1.
128. For the best collection of Native grapes (open air.) Wesley Blanchard, Lewiston, \$6; Peter De Rocher, \$4; W. W. Dunham, No. Paris, \$2.
Sawyer, Smith, True, Harlow.
129. For the best single variety. three bunches. Perley & Perkins, \$2; D. P. True, \$1.
130. For the best three bunches Delaware. Wesley Blanchard, \$1; Peter De Rocher, 50 c.
Sawyer, Briggs, Perley & Perkins, Dunham.
131. Concord. Wesley Blanchard, \$1; G. B. Sawyer, 50 c.
Briggs, Smith, True, Dunham.
132. Hartford Prolific. Peter De Rocher, \$1; G. B. Sawyer, 50 c.
Smith, True, Perley & Perkins, Blanchard, Dunham.
133. Rebecca. W. W. Dunham, \$1.
134. Allen's Hybrid. No entry.
135. Adirondac. Peter De Rocher, \$1; W. W. Dunham, 50 c.
136. Creveling. Peter De Rocher, \$1; W. W. Dunham, 50 c.
Perley & Perkins.
137. Massasoit, (Rogers' Hybrid No. 3.) S. W. Shaw, \$1; W. W. Dunham, 50 c.
138. Wilder, (Rogers' No. 4) John Vickery, \$1; G. B. Sawyer, 50 c.
W. W. Dunham.
139. Lindley, (Rogers' No. 9.) Wesley Blanchard, \$1; W. W. Dunham, 50 c.
140. Agawam, (Rogers' No. 15.) Perley & Perkins, \$1; Alfred Smith, 50 c.
Vickery, Blanchard, De Rocher.
141. Merrimac, (Rogers' No. 19.) G. B. Sawyer, \$1; Alfred Smith, 50 c.

142 Salem. (Rogers' No 22.) S. W. Shaw. \$1; S. C. Harlow, 50 c.

Sawyer, Blanchard.

143. Worden. Peter De Rocher. \$1; G. B. Sawyer, 50 c.

Smith, Dunham.

SUNDRIES. G. B. Sawyer, Black Hawk, Adirondac, Rentz, Perkins, Eumelan; Iona, Diana and Allen's Hybrid, grown under glass; D. J. Briggs, Blood's Seedling, Royal Muscadine, Seedling, Early Champion; John C. Baker, Golden Hamburg, Black Sweetwater, White Sweetwater, Black Muscadine, Royal Muscadine; M. J. Rogers, New Gloucester, Blood's Seedling; John Vickery, Concord, Delaware, Salem, Seedling and Sweetwater, grown under glass, *gra.*, \$1; Clinton, Martha; D. P. True, Clinton, Northern Muscadine; Perley & Perkins, Northern Muscadine; Wesley Blanchard, Herbermont, Early Black, (?) Essex, Champion, Walter; John Burr, Golden Chasselas, Golden Hamburg, White Sweetwater; Peter De Rocher, Essex, Martha, Brighton, Moore's Early, Telegraph, Lady, Belvidere, Early Black, (?) Union Village, Champion; W. W. Dunham, Moore's Early, Lady, Clinton, Isabella, Eumelan, Telegraph, Cottage, Northern Muscadine, Perkins, Blood's Seedling, Florence, Champion, Dracut Amber, Brighton, Janesville, Martha, Stewart's Seedling, *gra.* for numerous kinds on trial, \$2; G. H. Pope, Seedling, (of no apparent merit); Hannah Davis, Shaker Seedling; Alfred Smith, Eumelan, Isabella, *gra.*, 50 c.

There were several entries of well known varieties under names which proved to be synonymes, viz: Black Hamburg as *Red Hamburg*; White Sweetwater as *Dutch Sweetwater*; Telegraph as *Christine*; Hartford Prolific as *Framingham*.

CLASS 4 — PLUMS.

144. For the best general exhibition of plums, not less than ten varieties. No entry.

"Entries for premiums Nos. 145 to 163, inclusive, must consist of not less than twelve specimens each."

145. For best dish of plums of a single variety. E. W. Leavitt, \$2; D. P. True, \$1.

146. For best dish of Green Gage. No entry.

147. Purple Gage. No entry.

- 148. Red Gage. No entry.
- 149. Yellow Gage. No entry.
- 150. Prince's Imperial Gage. D. P. True, \$1.
- 151. Coe's Golden Drop. No entry.
- 152. General Hand. No entry.
- 153. Lawrence. No entry.
- 154. Moore's Arctic. No entry.
- 155. McLaughlin. No entry.
- 156. Reine Claude de Bavay. No entry.
- 157. Lombard. D. P. True, \$1; Mrs. J. P. Longley, Auburn, 50 c.

E. N. Nelson.

- 158. Columbia. No entry.
- 159. Magnum Bonum. No entry.
- 160. Washington. C. T. Jellerson, \$1; E. N. Nelson, 50 c.
- 161. Jefferson. No entry.
- 162. Penobscot. No entry.
- 163. Smith's Orleans. No entry.

Hon. A. W. Paine of Bangor, exhibited seedling plums grown by him and called Paine's seedling. Resembles Jefferson and Washington, and is probably a seedling of one of those varieties. Mr. Paine regards it as not inferior to either of them; (*gra.*, \$1.)

CLASS 5 — MISCELLANEOUS.

- 164. For best dish of peaches. No entry.
- 165. For best dish of apricots. No entry.
- 166. For best dish of nectarines. No entry.
- 167. For best dish of quinces. No entry.
- 168. For best ornamental dish of fruit. Mrs. A. B. Strattard, \$1.
- 169. For best peck of cultivated cranberries. Seward Dill, Phillips, \$2; Mrs. A. B. Strattard, \$1.

Alfred Smith.

- 170. For best samples of nursery apple trees. No entry.
- 171. For best samples of nursery pear trees. D. P. True; not seen by the committee.
- 172. For best samples of nursery grape vines. No entry.
- 173. For best orange tree, in fruit. H. B. Bartlett, Lewiston, \$1; John Burr, 50 c.

174. For best lemon tree, in fruit. No entry.
175. For best fig tree, in fruit. John Burr, \$1.
176. For best exhibition of canned fruits, in glass jars, five varieties, of domestic manufacture. Mrs. A. B. Strattard, \$1.
177. For best exhibition of dried fruit, by any process. No entry.
178. For best exhibition of dried fruits, of domestic manufacture, the product of one family or individual. No entry.
179. For best exhibition of evaporated apples. J. J. Towle, Dixfield, \$2.
180. For best cider apple sauce. Lizzie Haskell, West Gloucester, \$2; Hannah Davis, West Gloucester, \$1; A. B. Chipman & Son, *gratuity*, 50 c.
181. For best exhibition of fruit jellies, not less than five varieties, of domestic manufacture. No entry.

CLASS 6—FLOWERS.

“In this class no article can be entered for more than one premium.”

FIRST DIVISION.

182. For best display of cut flowers, filling not less than 100 phials. W. E. Morton, Portland, \$10; Mrs. A. A. Sawyer, Wiscasset, \$8; Mrs. Charles Stanley, Winthrop, \$5; Mrs. A. B. Strattard, \$3.
183. For best exhibition of roses, not less than five varieties. G. M. Roak, Auburn, \$2; W. E. Morton, \$1.
184. For best exhibition of Dahlias, not less than ten varieties. Mrs. Charles Stanley, \$2.
185. For best exhibition of Chinese Pinks. G. M. Roak, \$1; Mrs. Charles Stanley, 50 c.
186. For best exhibition of Carnations, not less than five varieties. G. M. Roak, \$2; W. E. Morton, \$1.
187. For best exhibition of Japan Lilies. W. E. Morton, \$2; G. M. Roak, \$1.
188. For best exhibition of Asters, not less than ten varieties. Miss L. M. Pope, Manchester, \$1; Mrs. Charles Stanley, 50 c.
Roak, Mrs. Strattard.
189. Pansies. G. M. Roak, \$1; Mrs. A. B. Strattard, 50 c.
Mrs. John C. Baker, Mrs. Charles Stanley.

190. Zinnias. Mrs. Charles Stanley, \$1 ; John Burr, 50 c.
Mrs. A. B. Strattard.
191. Phlox Drummondii. John Burr, \$1 ; Mrs. Charles Stanley.
50 c.
192. Stocks. Mrs. Charles Stanley, 50 c.
193. Balsams. G. M. Roak, \$1 ; Mrs. Charles Stanley, 50 c.
194. Chrysanthemums. No entry.
195. Petunias. John Burr, \$1 ; W. E. Morton, 50 c.
Mrs. A. B. Strattard.
196. Gladiolus. Miss L. M. Pope, \$2 ; G. M. Roak, \$1.
197. Verbenas. Miss L. M. Pope, \$2 ; John Burr, \$1.
Geo. M. Roak.

SECOND DIVISION.

198. For best pair of parlor bouquets. Mrs. Charles Stanley, \$2.
199. For best pair of wall bouquets. Mrs. E. N. Nelson, Minot.
\$2 ; Mrs. Charles Stanley, \$1.
200. For best pair of hand bouquets. W. E. Morton, \$2 ; Mrs.
Charles Stanley, \$1.
201. For best bouquet of Asters. Mrs. Charles Stanley, \$1 ;
Mrs. A. B. Strattard, 50 c.
202. For best bouquet of Dahlias. No entry.
203. For best floral pillow. W. E. Morton, \$5 ; G. M. Roak, \$3.
204. For best floral design. W. E. Morton, \$5 ; Mrs. A. B.
Strattard, \$2.
205. For best floral wreath. W. E. Morton, \$2.
206. For best dinner table decoration. Miss Edith Leavitt.
Auburn, \$1.
Mrs. A. B. Strattard, Miss L. M. Pope.
207. For best basket of wild flowers. Miss Edith Leavitt, \$1 ;
Miss Nellie True, Turner, 50 c.
Mrs. Strattard, Mrs. Mayhew, Auburn ; Mrs. Stanley.
208. For best exhibition dried grasses. Mrs. Charles Stanley.
\$2 ; Mrs. C. D. Mayhew, \$1.
Miss Taylor, Mrs. L. Brackett, Lewiston, Mrs. J. H. Merrill, Lewiston, Mrs.
Strattard.
209. For best everlasting flowers. Mrs. C. D. Mayhew, \$2 ; Mrs.
G. A. Emerson, Litchfield, \$1.
Mrs. C. H. Bradford, Turner, Mrs. Brackett, Mrs. Strattard, Mrs. Stanley.
210. For best dish of cut flowers. No entry.
211. For best fancy basket of flowers. Miss L. M. Pope, \$2 ;
G. M. Roak, \$1.

SUNDRIES. Mrs. Peirce, Lewiston, card receiver; Mrs. A. O. Hilton, Lewiston, shell flower wreath.

THIRD DIVISION.

212. For best exhibition of green house plants. John Burr, \$8; G. M. Roak, \$5.

213. For best exhibition of pot plants, not less than 20 pots. Mrs. J. H. Merrill, \$5; Miss Nellie Morse, Auburn, \$3.

“Persons exhibiting green house plants, (No. 212) cannot compete for premium No. 213.”

214. For best exhibition of ferns. G. M. Roak, \$3; John Burr, \$2.

215. For best exhibition of Geraniums. John Burr, \$2; G. M. Roak, \$1.

216. For best exhibition of Begonias. G. M. Roak, \$2; John Burr, \$1.

217. For best exhibition of Coleus. John Burr, \$2; G. M. Roak, \$1.

218. For best specimen plant of Tuberose. G. M. Roak.

219. For best specimen plant of Dracaena. G. M. Roak.

220. For best specimen plant of double Geranium. John Burr, 50 c.

221. For best specimen plant of single Geranium. No entry.

222. For best specimen plant of Salvia Splendens. G. M. Roak, \$1.

223. For best specimen plant of Foliage Begonia. G. M. Roak, \$1.

224. For best specimen plant of Flowering Begonia. Mrs. Isaac Haskell, Lewiston, \$1.

Roak, Burr.

225. For best specimen plant of Coleus. John Burr, \$1. G. M. Roak.

226. For best specimen plant of Fuchsia. G. M. Roak.

227. For best specimen plant of Carnation. John Burr, \$1; G. M. Roak.

228. For best single pot plant. G. M. Roak, century plant, \$1; Mrs. J. H. Merrill, Mrs. H. J. Walker, Lewiston; Mrs. John Vickery.

229. For best hanging basket with plants. No entry.

230. For best climbing plant, on trellis. Mrs. E. N. Leavitt.
wax plant, \$1 ; Mrs. J. H. Merrill.

231. For best Wardian case. No entry.

232. For best aquarium, with plants. No entry.

233. For best rustic stand not less than three feet in height, to be
filled with choice plants. No entry.

234. For best exhibition of wax flowers. No entry.

PROCEEDINGS OF THE WINTER MEETING.

The eighth Winter Meeting of the Society, (being an adjournment of the annual meeting which was held at Lewiston, Sept. 28, 1882,) was held at the Town Hall in Waterville, on the 30th and 31st days of January, 1883, in connection with a Farmers' Institute under the direction of the Secretary of the Board of Agriculture.

The attendance of persons from places other than the immediate vicinity of the place of meeting was larger than at any previous Winter Meeting of the Society. Free return tickets were furnished by the Maine Central and other railroads. The use of the hall, attended and lighted, and the tables, dishes, &c., for the exhibition, were provided by the liberality of the citizens of Waterville, free of expense to the Society. Guests were entertained at the Elmwood Hotel at reduced rates. For all of which favors due acknowledgment was made by votes at the close of the proceedings.

A stenographic report of the discussions was made by Mrs. S. G. Crosby of Waterville, from which, in a condensed form, the report herewith presented is made.

An exhibition of fruit was made in connection with the meeting, for the purpose of presenting the Winter fruits of the State in their perfection, which cannot be done at the Autumn exhibitions.—also to afford special means for study and comparison. A limited list of premiums was offered. The exhibition was satisfactory in character and extent; and for particulars, reference is made to the report of the examining committee in subsequent pages.

FIRST DAY.

The opening hour of the morning session was spent in arranging the fruit exhibition and preliminary business.

At 11 o'clock listened to an interesting lecture by Prof. C. H. Fernald of the State Agricultural College, on "The Potato Rot, and Fungoid Growths in Fruit Culture," which is reported, with illustrations, in the report of the Board of Agriculture. This, with the discussion to which it gave rise, occupied the forenoon.

Afternoon Session.

Met at 2 o'clock P. M. when the President, Hon. R. H. GARDINER, made his annual address, which was listened to with close attention.

OPENING ADDRESS OF THE PRESIDENT.

This is the eleventh year of the existence of the Maine State Pomological Society, and in accordance with custom, your President will say a few words of introduction to the various exercises of this, our winter meeting. In the few years that we have existed as a Society, we think it will generally be acknowledged that we have accomplished a good work, and at any rate, never in the history of our State, has so much attention been given to orcharding as now, and very many farmers begin to realize that a good orchard well cared for, yields more income and at a less cost than any other product of the farm.

Our last winter meeting was held at Biddeford, which was in many respects a very satisfactory meeting, with a fine display of fruit, and where we were cheered by the presence of Friend Taylor, so devoted and enthusiastic a member of our Society from the beginning, who, notwithstanding his advanced age, had driven in a sleigh to attend the meeting, some ninety miles, the thermometer a portion of the time twenty degrees below zero, and bringing with him some eighteen or twenty varieties of handsome apples for exhibition. Alas! his presence no longer greets us, but at all our meetings he will ever be remembered with affection and respect.

The summer of 1882 will ever be noted for the long continued drouth, in consequence of which, the larger portion of the apple crop, which had been so very promising, fell off or was affected with worms, and was generally small and not well colored. Heavy rains fell the middle of September, which in some instances wonderfully improved the apples both in size and color, but it came too late to be of very general benefit. As the supply of apples in Maine was far from abundant, high prices were expected; but from the supply of windfalls, the apples from Massachusetts, where the crop was abundant but very inferior, and also the best qualities of apples from Missouri and Arkansas—one county in the latter State produced over a million of barrels—the prices ruled low till late in the season. Our autumn exhibition was held the last of September in connection with the State Fair, and taking into consideration the

season, it was a remarkably fine one. As to the flower garden the past year, from my own experience, whether as to roses, bulbs, perennials or annuals, I should say that I never remember so unpropitious a season, cold and wet in the spring and very dry in the summer.

In all farming operations, what is there that gives greater satisfaction to the farmer, than to gather a bountiful crop of fruit at the different seasons. that years before he planted in faith, then grafted, and for year after year has been watching to see if they continued erect—had an open top to admit the sun, no branches crossing one another, that they were well balanced and that no borers, mice or caterpillars were at work to destroy all his hopes. How many deprive themselves of this pleasure and profit, because the results are not immediate, but that patient waiting for some years is necessary, forgetting the familiar story of the man who had always made this excuse for not planting an orchard, but lived to eat fruit raised by his grandson.

Besides planting an orchard, there is another subject now exciting great attention all over the world—owing to the destruction of the forests what sad results have happened. The land of Palestine, in the days of Bible history, was a land described as flowing with milk and honey, now, owing solely to the destruction of the trees, is a barren waste: and such, too, is the case with many parts of Spain, once so very fruitful. We, perhaps, can scarcely expect our farmers just yet to devote much time or expense to planting forest trees, but when driving through the country one sees the school-house with not a tree near it, exposed to the scorching rays of the sun, and the bleak blasts of winter, and no shade for the children to enjoy at recess,—and the same, too, may be said of many a farmer's house — when all this could be changed at such a trifling expense, it does seem passing strange. And, besides a tree or two in front of the farmer's house for shade, and a clump at the north-west as a protection, at what slight cost can he add a cheap porch made of branches of trees or of laths, and upon this train a honeysuckle, a Virginia Creeper, or Clematis, or better yet a grape vine, and then by the expenditure of two or three hours labor, make one or two beds for his wife and daughters to ornament with flowers and shrubs; nothing can be more refining and civilizing than this. The clearing up of trees and bushes causes springs and brooks to dry up. Nearly every farm in this region has swales or gullies, and these

when cleared up are of little value. Now if every one will leave these gullies in a natural state, not only the bushes but trees will spring up, and the farmer who has been greatly troubled by the want of water, will find that he has an abundant supply, beside a growth of valuable trees upon land fit for nothing else.

To return to apples. But a few years since the foreign export of apples was confined to the Newtown Pippin, shipped by one man, Mr. Pell, from New York, but now in a good season the export exceeds a million of barrels, and except in very rare seasons of extraordinary abundance, there seems no probability but what good apples will always find a sale at a fair price. As in the progress of this meeting you will hear essays and discussions by those well qualified to speak upon the various special subjects appertaining to pomology, I shall not touch upon them at all, but continue with a few general remarks.

There has been a great discussion and difference of opinion as to the different kinds of apples one ought to cultivate. Allow me to say in answer that different soils and locations suit different apples. For instance, with all my endeavors, I find it impossible to raise a barrel of good Roxbury Russets, an apple that so many, and some of them located not far from me, find to be the most profitable apple they can raise. On the other hand, I have been peculiarly successful with the Bellflower—large crops annually, and generally of better size, color and flavor, than any others seen at our exhibitions. In consequence of this I am every year setting out more trees of the same sort. I therefore would advise every one to experiment with different trees of the standard varieties, and when he ascertains which does the best, then go in largely for that. The general opinion is that the Baldwin is *the* tree for market and also for home use, and that nine-tenths of every orchard should be Baldwin. But as I have already said, first ascertain what variety will flourish best with you, whether Baldwin, Roxbury Russet, Bellflower, R. I. Greening, Talman Sweet, or some other standard, and then plant largely, if not exclusively, of the variety you find succeeds best with you.

Inquiry has often been made as to the best season for planting trees. I believe that taking one year with another, the spring is the most safe, but I have had great success with autumn planting. It depends upon the season. If, after planting in the autumn, dry weather prevails, and this continues till the ground freezes,

you will lose many of your trees, but if rains follow and settle the earth around the roots, probably every tree will live. Allow me to say here, though not pomological it is arboricultural, a subject embraced by our Society, that the proper time for planting evergreen trees is very different from that for deciduous. The time for planting evergreen trees such as the Norway Spruce, Hemlock, etc., is either in May, just as the new leaves put forth, generally towards the last of May, or else in August when the second growth puts forth. I think I have generally been more sure of success in August than in May, but either will do. In planting an orchard, great care is necessary. The ground should be prepared as for a crop of corn. Then procure trees with good roots, not dried by exposure to sun and wind. Avoid if possible setting them out on a very windy day. From my own experience, and that of many others, I should advise that apple trees should be planted thirty feet apart each way, never less. A tree forty or fifty years old will often cover a space forty feet in diameter — I have often seen trees planted eighteen feet or less apart. These do well for a few years, but after twenty years when the trees should be in full bearing you will find only the outside trees bearing good fruit, the rest are so crowded and shaded they bear but little fruit and that small and without color.

A word or two now as to the mode of planting. Dig a hole the size of the roots, and six to twelve inches deeper than you wish to set the tree, then all around the hole undermine the sod at least six inches. This is to enable the roots to make a ready start. Next in the centre of the hole, make a little mound of good earth, six to twelve inches high, set the tree upon this, carefully stretching out the roots, then be careful to cover all the roots with good soil, and especially fill the hollow beyond the roots with the same, and as you proceed in filling in the earth, occasionally lift or shake the tree so as to be sure there is no space not filled with earth, and the last operation is to press the earth very firmly around the tree. Planted in this way no stake is required, and if the tree was all right when set out it will be sure to grow. In France they transplant the largest trees with uniform success. I remember when in Paris, passing by the Place de la Bourse. This was a paved avenue or court of some length, at the end of it stood that splendid building, the Exchange, the centre of the commercial operations of France. I was absent a few months, and upon my return what was my amazement at seeing

on each side of this avenue a row of large trees, apparently growing there for forty years. It seemed miraculous. But the next year, passing some time in the South of France, I was one day in Marseilles, and the marvel was explained. The splendid Hotel de Ville (City Hall) had just been completed, and it was desirable the large square in front should be filled with trees. I watched the operations with the greatest interest. A tree more than thirty feet high was dug round, a diameter of say ten or twelve feet, and as deep as the roots. It was then partially undermined, and plank put under and at the sides. A peculiar carriage was then brought into requisition. There were two large timbers, say thirty feet long, which rested at each end on a pair of low wheels. This was brought up to the tree, one timber removed till the carriage was in place, and then it was replaced on the wheels and the tree stood between the timbers. A tall derrick was then placed on the timbers, and the tree raised in its box so as to clear the ground. Stays were fastened from the top of the tree to each end of the timbers so as to keep the tree upright. It was then drawn by a very strong team to the place where it was to be planted. Previously a hole, a little larger than the roots of the tree had been dug. This hole was then filled with good earth. The tree was drawn over this, the loose earth all removed, the tree lowered into its place, the plank taken out, and the hole filled up. After this a large hole was dug on each side of the tree and these were filled with good earth. Seeing these trees afterward one could scarcely believe they had been so recently planted.

Returning to apple trees, I wish to say a word about the general mistake of planting too great a variety. This is the point which has of late been frequently touched upon, but such is the temptation to produce a large variety at the annual exhibition, or to try a new variety recommended by fruit tree dealers, that it is well to reiterate its great disadvantages. I trust that our Society will never again give a premium for the greatest variety of apples. I once had over fifty kinds but am reducing the number as fast as possible. Last year I cut down a large tree, a New York Russet, which always bore several barrels of apples, to reduce the number of my varieties. It is very well for those who have leisure and taste to experiment with new varieties, and we may sometimes in this way obtain a valuable addition to our standards, but for one who desires to raise apples for the market, beside a few summer, autumn and winter for family

use, let him ascertain which of half a dozen standard sorts suit his soil and location best, and then plant at least nine-tenths of his trees with this.

I wish to say in concluding these few remarks that our Society embraces a large number of subjects, and I have barely alluded to one or two, but you will soon have the pleasure of hearing interesting papers and discussions upon many of them, which I feel confident will be practical and of lasting benefit to us all.

Following the delivery of his address, the President read an original paper contributed by Dr. T. H. Hoskins of Newport, Vt., on "Hardy Winter Apples," an article then recently written by himself for publication on "Nomenclature of Russets," and an article on the same subject by Dr. Hoskins. Mr. Gardiner's article was originally published in the *Home Farm*, and was copied by Dr. Hoskins, with comments, in the *Vermont Watchman*; and the notes by Dr. H., here given, were published in the last named paper in pursuance of the subject; all of which are here inserted in their order.

HARDY WINTER APPLES.

BY DR. T. H. HOSKINS.

The Baldwin is the great market apple for winter in New England, and has held that position for so long a time that it must be a wonderful fruit that will replace it in the regard and confidence of growers and consumers. It is quite as hard to dethrone a popular fruit as to revolutionize a popular government; and as with governments, so it will be with fruits, they must themselves deteriorate far before the people will begin to consider the question of dispensing with them.

But we cannot, even in behalf of our greatest favorites, prevail to reverse the fiat of nature when she cries, "thus far, but no farther!" It must be conceded that the Baldwin apple is a fruit of southern New England only, and that more than half of our area has a climate in which that apple can never be grown with profit, if even at all.

Unfortunately, not only the Baldwin, but all the other standard and marketable winter apples of the country, partake, more or less, of this intolerance of severe winter temperature. The Rhode Island Greening and the Roxbury Russet are scarcely at all hardier than the Baldwin, and the Northern Spy only a little hardier than these.

The Yellow Bellflower ranks only by the side of the Spy, while the Ben Davis, though somewhat hardier than either, is of so poor a quality that it can never be of much value where any of the preceding can be had, either by growth or importation. After all these have been tested, the fact still remains that there is not found among them one which can be grown with profit in the northern half of Maine, New Hampshire and Vermont.

Now I know by experience that at meetings like this the bulk of the attendance is from the Baldwin country, and I have been chilled in my enthusiasm greatly to find that my brother fruit-growers from the Baldwin country not only do not want any other apple for themselves, but they are not at all anxious for the discovery and distribution of any rival of the Baldwin in the region where the Baldwin will not grow. I suppose that this must all be regarded as quite human and natural, yet nevertheless the interests of the few must yield, in the long run, to the necessities of the many. We who live in the "cold north" where Baldwins, Greenings and Russets do not thrive, feel exactly as the peach and grape-growers of southern New England feel, in desiring at least to possess some varieties that will make them independent for home use, if not for market, of the more favored regions to the south of them. And as the southern peach and grape-growers do not seem to suffer at all from New England competition, so, I think, in view of the wide home and foreign market that is open to the peculiar apples of southern New England, (and which is as free from any possible southern as it is from more northern competition,) our Baldwin growing friends can well afford to look kindly, and even with some interest, upon the efforts of pomologists in the "cold belt," to find out what may be done to make orcharding possible there, at least so far as to yield a home supply sufficiently abundant and cheap to make life tolerable in our long winters of zero temperature.

I am sure that, as a State, Maine is vastly interested in the development of fruit-growing north of the Baldwin region, which covers but a few of her 32,000 square miles of territory. I doubt if there is a space so large as Connecticut, in southwestern Maine, where the standard winter apples are successfully grown on the commercial scale; and when the remaining 28,000 square miles are even moderately populated, with all the people may do there in the way of orcharding, it is quite likely they will still make a home market for every surplus apple of the Baldwin-growing portion of the State.

Meanwhile it will be a great encouragement toward the settlement of northern Maine to be able to show that some kinds of fruit have been discovered that can be grown there successfully, even with the moderate amount of care that is bestowed upon them by the average farmer.

One thing in this connection is but little known that ought to be known. It is a fact that apples which do not keep well in one section become good keepers when grown a little farther north. The Rhode Island Greening and even the Baldwin, grown in Pennsylvania, are only late fall apples. But starting into growth only two weeks later, in New England, makes them good keepers. The little difference between Connecticut and southern Maine makes Maine Baldwins and Greenings very much the best keepers, and therefore the most valuable and salable fruit, either for home use or for export.

Now this rule holds good when you go still further north. Jewett's Fine Red (Nodhead) is an early winter apple in Massachusetts; but although it cannot be grown more than 80 or 90 miles north of the Massachusetts line in New Hampshire, it there becomes a very good keeper. Even the Gravenstein (too tender to succeed very far north) becomes an early winter fruit along its northern limit, and I am assured that the Duchess of Oldenburgh is one of the standard winter apples of Russia between latitudes 55° and 60° . The reason for this is undoubtedly the shortness of the growing season in the higher latitudes.

While here, on the eastern side of America, we have as cold winters as Russia combined with summers as long as those of France, and warmer, yet the same rule will be found to hold good, though not with the same apples. I doubt if we shall find many, if any, very long keeping apples among the apples of Russia, when brought to this country. We shall have to depend upon our own seedlings.

It is unfortunate that the family of apples brought by our ancestors from England produces very few seedlings that are what is called "iron clad" in resistance to a low winter temperature. I have never found one variety that is entirely and reliably hardy where I live. The family of apples brought from France into Canada is a little hardier than our New England apples, yet they only succeed well in the immediate vicinity of the St. Lawrence river. I know of but one Canadian apple that is truly "iron clad," and that, the "Peach

Apple of Montreal," though brought from France, is pronounced by Prof. Budd of the Iowa Agricultural College (who has made the subject a study) to be a "stray Russian." It is certainly entirely unlike any other Canadian apple.

Maine has quite a list of winter apples hardier than the Baldwin, and some of them possess merits which entitle them to more attention than they have yet received. One of these is the Rockwood apple, recommended and sent to me some 14 years ago by the late John Nelson of Hallowell, but originating in Belgrade. It is not strictly "iron clad," but belongs in the same list with the Red Astrachan, Talman Sweet and Faneuse. Where these do well the Rockwood may be planted with success. It is a thrifty grower, a free bearer, and the fruit is of good size, color and quality, but in flavor it belongs to the class of "neutrals," being neither sweet nor sour. It is good for dessert and for baking, but not tart enough for pies.

Undoubtedly the hardiest winter apple that has ever been made widely known in this country was produced in Minnesota from a Maine apple seed, or rather crab-apple seed, sent from Bangor to the grower of the original tree in Minnesota. And this, I believe, is indicative of the source from which we may expect many hardy apples—Siberian crab-apple seed from fruit of trees growing among our best apples, and fertilized in the bloom by their pollen. We have already a fine seedling of this kind in Vermont, grown from a seed of the common yellow Siberian crab, but of good size, great beauty and excellent quality—the Northfield Beauty, grown by Leonard D. Cady of Northfield, Vt., and sometimes called "Cady's Crab." It is an early winter fruit, the tree not perfectly "iron clad," notwithstanding its origin, yet hardy enough for most places.

The Minnesota seedling referred to, the "Wealthy," grown by Peter M. Gideon of Excelsior, Minn., is becoming tolerably well known in Maine, and as it bears very young and very full, will soon become abundant where planted. It is apparently as hardy as Duchess of Oldenburgh, and is much like that variety in tree and habit of growth and fruiting. It is not as valuable for market, or for all uses of the household as the Baldwin, and grown where the Baldwin grows is not nearly as good a keeper. But grown where it belongs, far north, it keeps well all winter in a good cellar. It is soft fleshed and well flavored, but lacks acidity for a pie fruit, though not so decidedly as the Rockwood, being more like the

Fameuse. In general appearance, size, color, &c., it is not inferior to the Baldwin, and in a near market would outsell it as a dessert fruit in the first of the season. How it will endure transportation over long distances is yet to be thoroughly tested, but I think about as well as Fameuse—not so well as the Baldwin.

Two apples of this vicinity (shores of Lake Memphremagog) have shown remarkable hardiness, large productiveness and good keeping qualities, combined with good to very good quality. The first of these, Magog Red Streak, is somewhat of the shape, size and general appearance of the Yellow Bellflower, but with more or less striping of red upon the sunny side. The tree is hardy, though somewhat subject to bark blight in some places. It grows rapidly, and comes into free bearing when eight or ten years planted. In some seasons the fruit is apt to be ribbed, even more than the Bellflower, but is always fair. It has yellow flesh, a mild acid and quite peculiar favor, not always liked at first, but is of unquestionable excellence as a culinary apple. Until I received the Wealthy I considered this my best winter apple, and the Wealthy by no means displaces it, for though better for eating it is not its equal for cooking. The Wealthy bears younger than the Magog, and also more abundantly, about in the proportion of the Baldwin to the R. I. Greening or Bellflower.

For long keeping we have to choose, as yet, between the Golden Russet of western New York and Scott's Winter. Both are hardy, though the Scott is the most so. In size the Scott is fully twice that of the Golden Russet, of a fine deep red, laid on in heavy stripes and often covering the whole fruit. Both these varieties bear too heavily, and would be more valuable if less productive. But in good soil, well treated, the Scott keeps up to a good medium, and is very salable. It is a perfect keeper and, unlike the russets, never withers. Though hard and sour until February, it becomes more mildly acid, with a high, spicy flavor in the spring, which makes it very acceptable, especially as other apples become scarce. For cooking it is very much liked.

I give the above list, not for the country where the Baldwin grows, but for that large part of Maine where none of the standard sorts succeed. I believe them all worthy of trial in such localities. In the Northwest they are already well known and approved.

In addition, and by way of postscript, perhaps it would be well to say a word about two other apples now attracting attention, and

recommended for extensive planting. The first of these, McIntosh Red, will bear all that can be said in its favor for excellence of quality, beauty and productiveness, and *where it does not spot* it will be a great acquisition. The tree is not "iron clad," but is hardier than Fameuse, and a good though rather slender grower. The fruit averages with Wealthy or Baldwin in size. Its chief defect is spotting and cracking, which I fear will make it unprofitable in many places.

The Mann apple, which is being strongly pushed and widely advertised, is by no means an "iron clad," or even a commonly hardy tree. It winter-kills badly with me, even worse than Pewaukee, which has also been highly extolled, but will not do for hard places. In appearance and quality the Mann is an inferior R. I. Greening, *much* inferior, but a considerably better keeper. I think this postscript may perhaps be worth as much to those now about to set new, or increase old orchards, as all the rest of the paper.

NOMENCLATURE OF RUSSETS.

There is, perhaps, no variety of apple about which there has been so much doubt and confusion as the various kinds of russet. During the past winter, I was engaged in a quadrilateral correspondence on the subject, and the result may be of interest to fruit growers, though I regret I did not publish it at the time, when the subject was fresh.

I think the correspondence originated in this way. I received a letter from Mr. Charles G. Atkins, requesting some scions of American Golden Russet. I answered that I did not think I had ever seen an American Golden Russet, and I doubted if it could be found in Maine. Mr. Atkins would not give the matter up, and at last obtained scions of the real American Golden Russet from West Chester, Pa., and kindly sent me some. It is known there and in New Jersey under the name given by Cox, *Sheepnose*, and elsewhere as *Bullock's Pippin*. Hon. Henry Ingalls, at all our exhibitions, has maintained that an apple he exhibited was the American Golden Russet. Hiram Pope of Gardiner, raises a delicious russet which came from Massachusetts, and which he called the American Golden. I sent a specimen of these to Mr. Atkins and also to Mr.

Ingalls. Mr. Atkins found a tree at Bucksport, seventy or eighty years old, which produced the same apple, very delicious, and as juicy in June as in March. After exchanging apples, we decided that Mr. Ingalls' apple and the Bucksport and Pope apple were different, though, to settle the matter, we sent specimens to Mr. Charles Downing. He decided, without hesitation, that the Bucksport and Pope apple was the one so well known and so highly esteemed in Massachusetts as the Massachusetts Golden Russet, the true name of which is Hunt Russet, which originated in the Hunt family, in Concord, Mass., two hundred years ago. Mr. Ingalls' apple, he thinks, is the American Golden Russet, known elsewhere as *Sheepnose* and *Bullock's Pippin*. Mr. Downing remarks that he thinks his late brother (A. J. Downing) made a mistake in calling it "American Golden Russet," as it has led to great confusion.

In correspondence with Mr. Cole, of the firm of Hall & Cole, extensive dealers in apples in Boston, he advises Mr. Atkins and myself to drop all russets but the Roxbury, as the American Golden, he says, "is almost sweet, tough, tasteless, miserable;" but in condemning all Golden Russets, he excepts "the old-timer, grown here in Massachusetts, which has a red cheek, and is as fine eating as need be." This is the Hunt Russet. Evidently, Mr. Cole has not seen the genuine American Golden, or Sheepnose.

I should add that I have every year exhibited a small round apple, which is entirely russet, as the American Golden. This, I supposed, might be the English Golden; but Miss Alice Foster informs me that, as far as she knows, it originated with Dr. Ford of Gardiner, and that Mr. Downing could not identify it. Our late associate, Friend Taylor, raised the same apple and called it American Golden. It is a nice apple in December and January, and a most profuse bearer alternate years.

R. H. GARDINER.

Oaklands, August 28.

Notes on the Same Subject by Dr. Hoskins.

Since printing Mr. Gardiner's letter about the mixed-up state of the russet question, we have been studying it up, with the help of friends, and now think it may be unravelled as follows :

AMERICAN GOLDEN RUSSET.

Synonyms: Sheepnose, Bullock's Pippin. This is grown upon Grand Isle, and our correspondent, J. T. Macomber, says that though small it is one of the best apples he has tasted. Downing says it is one of the most delicious and tender apples, in flesh more resembling a buttery pear than an apple. This is very often confounded with the next, Hunt Russet, which is, however, quite distinct, having a red cheek. The American Golden Russet is of wide distribution, east and west, but is not perfectly hardy on Grand Isle, and is therefore far from being "iron clad." Its fruit is below medium size, roundish-ovate, dull yellow, sprinkled with a very thin russet. Flesh yellowish, very tender, juicy, with a very rich spicy flavor. Season in New York, October to January. Keeps better in Vermont. The tree is of erect growth, leaves sharply serrate.

HUNT RUSSET.

Synonyms: Golden Russet of Massachusetts, Fay's Russet, Russet Pearmain. This apple originated on the Hunt farm, Concord, Massachusetts. Fruit medium in size, roundish-oblate, conic. Skin golden russet with a red cheek. Flesh yellowish-white, tender, rich, mild, sweet sub-acid. Season in Massachusetts, January to April. This variety is not very much known out of New England. It is as highly esteemed, where known, as the preceding, and is a better keeper. The tree is vigorous, upright and productive, the young shoots a clear, reddish brown. It succeeds in southern Maine. We do not know of its being grown in Vermont.

GOLDEN RUSSET OF WESTERN NEW YORK.

Synonyms: English Russet, English Golden Russet. This is an old English variety, but first became widely known and popular as a market apple when grown on the rich, fresh soils of western New York. The tree is thrifty, spreading, rather irregular, forming a bushy head. The young shoots are the distinguishing peculiarity of the variety, compared with other russets likely to be confounded

with it, being slender, dull reddish brown, slightly downy, with *numerous small white dots*. Undoubtedly this is the hardiest russet, succeeding well on the banks of Lake Memphremagog. At the same time it is one of the smallest and poorest, and needs rich soil or heavy manuring to make it at all profitable. It is a long keeper, but must be kept in tight barrels and in a very cool place, or it becomes worthless from shrivelling. This is true, more or less, of all the russets, the "russeting" being in fact a mere open state of the pores of the skin which allows the juice to evaporate unless kept from the air and warmth. Fruit medium or below in size, roundish, or roundish-oblate, *not* conic. Skin very rough, color yellow, dull russet, the skin bronzed (not red) on the sunny side. Flesh whitish yellow, fine-grained, *compact*, mild sub-acid. December to March in New York, but keeps late in the spring when grown in northern New England and properly cared for.

ENGLISH RUSSET.

Synonym: Poughkeepsie Russet. As the "Golden Russet of Western New York" is really an English apple, so, by the misnaming of ignorance, the so-called "English" Russet is probably of American origin. It is a valuable long-keeping variety, which has been quite extensively grown in New York and New Jersey for market, but is, we think, being much replaced by the large Roxbury Russet. As grown there it is not fit for use until February, and may be kept the year round, according to J. J. Thomas. The tree grows very straight, forming an upright head, with smooth, reddish-brown shoots. The fruit is of medium size, roundish, slightly conical, and very regularly formed. Skin pale greenish-yellow, about two-thirds covered with russet, which is thickest near the stalk. Flesh yellowish-white, firm and crisp, with a pleasant, mild, sub-acid flavor. The quality of this apple is inferior even to the Golden Russet of western New York, and therefore the poorest of the whole four that are likely to be confounded.

As this article is mainly written to distinguish these four sorts from each other, we need not refer particularly to other russets. The Roxbury Russet has now taken its place alongside of the Baldwin and Rhode Island Greening as the great market apple of its class, and is gradually excluding the other sorts, not because it is better, but because it is larger and more showy. In quality it is no better than the two last named, and no better keeper. It is not

much more hardy than the Baldwin and Greening, and cannot therefore be grown far north. If Russets are desired, therefore, in those sections, that of western New York must be chosen. When we come to amateur apples, that is, apples grown only for home use, the old American Golden Russet and Hunt Russet are the ones to choose for the east, though it would not be a bad thing to try the Egyptian or Bagby Russet of southern Illinois, a good keeper, even there, and of such high, rich flavor that it has been called the best of all the russets. Like the Hunt and old American, it is only of medium size, but the tree is productive.

Among russets that are not keepers, but are of the highest quality as dessert fruit, and are quite hardy far north, (though not strictly "iron clad,") we would like to call attention to two sorts which we have growing in our own grounds. They are both Canadian in their origin, unless, indeed, they came originally from France. One is the Whitney Russet, a thrifty variety, fruit medium size, yellow, with thin russetting, and an occasional shade of crimson in the sun. Downing has this as a keeper, which cannot be correct, as it is a fall apple in northern Vermont. In quality it can hardly be surpassed. The other is the Bourassa, (pronounced Boo-ra-saw,) which is a very poor grower when root-grafted, but does well top-worked on a strong stock, and then produces bountifully of apples varying remarkably in size on the same tree, but all with a dark russet coat and a rich crimson cheek. In quality the Bourassa leaves nothing to be desired, being, when well grown, rich, soft-fleshed, and very pear-like in quality. Its season is September.

DISCUSSION.

Hon. Z. A. GILBERT, Secretary of the Board of Agriculture, was called upon, and in reply, said: While I think there are many points in the first paper by Dr. Hoskins deserving attention, I hardly know what one it will be most profitable to discuss at this time. There is, however, one point which at this moment suggests itself as worthy of consideration; and that is, his reference to the Russian apples. I was especially pleased with the remark that for long keeping varieties we must look to our own seedlings, and not to the varieties of Russian origin. He has experimented with the latter enough to make his opinion of great value,—and it corresponds with the experience of others.

I have become so completely disgusted with these pomological Jack O'Lanterns, that in discussing them, I may say some things more strongly than I ought to; but we have been chasing these delusions here, in the best fruit-growing section of the State, for a good many years,—and with what result? What have we gained, or what need we expect from them? It is about time for us to find out what they are; what we have got from them, and what we may *not* expect from them.

Several years ago the Department of Agriculture imported scions of a large number of varieties of Russian apples with the view to secure especially hardy varieties for propagation near the northern borders. The result, as we all know, is a failure. There has not yet been obtained a single variety of a goodly winter fruit, from something like a hundred varieties, which have received the care and attention, time and money, of our pomological experimenters from the east to the west.

There have been a few, two or three varieties of extremely early fruit, which proved valuable and really worthy of attention in certain localities. But we all know about early fruits. We have no room for any more varieties here. We have no market for any considerable amount of early fruit; we do not want to raise a large amount for home use because we have enough already. We have no need of special efforts in that direction.

Now what is the reason of this? May we not discuss the whole subject of Russian fruit right here? It is an established fact that we need not look for late keeping varieties of apples from localities of extremely low temperatures and short growing seasons, for the reason that the late keeping apple requires a long season to grow. The wood corresponds in a measure with the fruit it bears, and in the late keeping varieties requires a full and complete season of growth; while in the Russian varieties both the fruit and the wood ripen early, as they necessarily must in the short seasons of their native localities. The Russian apples, when grown in our climate, retain their habits of early ripening, consequently the two conditions of an extremely hardy, thoroughly "iron clad" variety and a late keeper are not found in juxtaposition, and we need not chase these shadows in that direction any longer. The experimenters who have been at work upon these numerous varieties have come to the conclusion that there is nothing valuable among them for late keeping;

nothing but the early ones, that we have no call for, have proved valuable.

I expect that these views will receive some criticism, and I care not how much; enough, I hope, so that by the discussion we shall be able to settle upon some facts. We want more facts and less of mere theories and speculations.

With respect to the extreme hardiness of *certain varieties*, I am not prepared to speak at this time. My experience in fruit-growing has been largely in the central portion of the State. We have here a large number of varieties of standard apples of superior quality, both early and late keeping, and sufficiently hardy for all practical purposes; besides a large class of native seedling varieties of excellent quality and perfect hardiness, but generally early ripening.

What I have learned of the difficulties of fruit-growing on our northern border has been learned from conversation and correspondence with individuals in that locality. There is no doubt that we want for that section varieties of extreme hardiness, but with that we want also the quality of long keeping, which as has been shown is not to be looked for in the Russian varieties.

MR. W. H. PEARSON, of Vassalboro'. There may be some merits in the varieties of apples so often presented to our attention by "agents" under the name of "iron clad." Some of them may be good, but it seems to me that we have gone far enough in that direction. If we confine ourselves to home-grown trees, sowing seeds ourselves, producing trees ourselves, making such selections as seem right, we shall avoid a good deal of useless expense, and shall, at the same time, improve greatly our home-grown apples.

[At this point a brief discussion took place upon certain varieties of apples which had been mentioned or inquired about. As the subject was resumed at a later period, the report is postponed.]

The following extracts from a report made by Mr. Charles Gibb, of Abbotsford, Que., made to the Montreal Horticultural Society, in 1882, are introduced here as bearing on the subject of the foregoing discussion. This report covers fifty-five pages, and contains much valuable information in relation to the fruits of Russia and Central Europe. I have copied only such parts as seemed to be of special interest, including the descriptions in whole or in part of a few of the many varieties of apples mentioned, only regretting that the want of space prevents me from transcribing the entire report to these pages.

SEC.]

EXTRACTS FROM REPORT ON RUSSIAN FRUITS.

BY CHARLES GIBB, ABBOTTSFORD, QUE.

* * * * "The fruits of Western Europe and their pure offspring born on this continent, as a rule, are not long-lived upon the Western prairies above latitude $43\frac{1}{2}$, not a success above $45\frac{1}{2}$ in this Province, and that only in exceptionally favorable localities. In Eastern Russia we find fruit growing a profitable industry in climates decidedly more severe than that of the City of Quebec. Hence we may expect to increase the area of fruit culture northward upon this continent very largely."

"The uncertainty of these fruit trees of Western Europe in the severer climates, had led to large importations by the State Agricultural College at Ames, Iowa. (See 7th Report Montreal Hort. Soc., p. 151.) Prof. Budd had gathered there the largest collection of fruits for severe climates, which I know to exist; but such was the uncertainty of nomenclature, such the difficulty of getting exact information as to their probable value, that the work of sorting out the best seemed a work of many years. Northern horticulturists were looking with great hope to the Russian fruits. The work could not be allowed to rest. Some one had to go to Russia. Mr. Budd and I went."

"Nomenclature in Russia is hopelessly confused. Different names are given to the same apple in different localities, the same name to different apples growing in adjacent districts. So, many names, however formidable they may sound in Russian, mean merely round white, white sweet, white transparent, &c., names without individuality. Fortunately, a few names have been fixed by commercial demand, and are known by the same names throughout Russia."

"One great difficulty in Russian nomenclature arises from the strong family likeness of seedlings of like parentage. A hardy race of the apple, seemingly more nearly allied to the wild form than the cultivated apples of Western Europe, has been grown for many centuries by seedling production, and has been reproducing itself from seed. Yet this is not strange news to us. Some families of apples, even when surrounded by apples of other types, have a strong tendency to reproduce themselves in their seedlings." * * * *

ON CLIMATES.

“In this part of Canada we suffer from drought but not from diminished rain-fall. I must explain this apparent contradiction. England is a land of verdure, the lawns are like velvet, the trees and thatched roofs covered with moss. What a contrast to our dry climate, and yet the annual rain-fall of London is nearly thirteen inches less than that of Montreal. It is from aridity of air, and consequent rapid evaporation that we suffer.

In Russia we find fruit cultivated largely in climates where the conditions of extreme cold, dryness of air, and scanty rain-fall are greatly intensified.

In the Government of Kasan, above latitude 55 where the winter temperature is five degrees lower than in the city of Quebec, the rain-fall a good deal less than one-half, the evaporation as great, we find apple growing a great commercial industry, *the* industry, in fact, in twelve peasant villages. This is the coldest profitable orchard region of the world, and the conditions of growth deserve study. The soil upon these exposed bluffs is a fine comminuted dusty clay, like a “loess.” For retaining moisture, for absorbing it, for holding frost without injury to the roots, there is no better. The dry fall here causes perfect maturity of growth; the thick, fine textured leaf does not suffer from the dryness of the air. It was Mr. Budd, whose microscopic study of the leaves of these climates first showed their peculiar cell structure. Thus we see that the apple tree of Kasan is a tree thoroughly adapted to the climate it lives in. However, the cold of Kasan seems more uniform than ours. In this Province we suffer from the warmth of the sun in the late winter and early spring, warmth followed by sudden cold. This results in “bark-bursting” and “sun-scalding” of the trunk and lower branches. Such injury is rare in Eastern and Middle Russia, but how much this is owing to the climate, how much to the character of their hardy race of trees I cannot say.” * * * *

“St. Petersburg is in lat. 60, so far North that the stars cease to be visible during two months in summer, the sun is too short a distance below the horizon. A cold coast climate; a Gaspé or Anticosti climate, one would suppose. A cool, short summer, a long changeable winter, not colder on an average than Montreal, but subject to greater extremes of sudden cold. Early terminate growth is the special characteristic needed here.”

APPLES.

“*Anis*.—This is the leading apple of the Volga, the apple tree most highly prized, most largely grown. To the inquiry, which are your most profitable varieties? the reply invariably was *Anis*, I think, invariably, my notes show no exception nor do I remember one. Such was the verdict in all the orchards of the different towns and villages between Kazan and Saratof. We first met with it in that curious semi-oriental bazaar, the Nijni Novgorod fair. Here we find the Russian peasant orchardist bringing large quantities of it to the bazaar in bark boxes, usually willow bark boxes, holding about three bushels.

In the southern part of the Government of Kazan, in latitude 55, the same latitude as Moscow, but 430 miles to the east of it, in a continental climate, a climate of extremes, and yet 600 miles nearer the North Pole than the City of Quebec, there are twelve villages where the peasant proprietors are apple growers, the chief industry in fact is apple growing. When we were there the little trees were loaded with fruit, yet the thermometer had been down to forty below zero the winter previous. Five years before, during one day, the temperature on these exposed loess bluffs was—40 Reaumur, or 58 below zero by Fahrenheit's thermometer. These low temperatures, however, do not seem verified by the meteorological records in the City of Kazan. Hearing of these low temperatures I looked for winter injury to the trees, but did not find any traces of it.

In answer to the query, which is the hardest apple tree you have the tree that has stood best the most trying winters? the answer, I believe, always was *Anis*. The general idea there is that it is of all kinds known, the apple tree that can be grown the farthest North, except what they call the Chinese apple, or as we would say, the Siberian crab, and these crabs, which are not common, are true Siberian *Prunifolias*, and not less hardy hybrids. In these villages the apple is grown, in a good season, certainly to the value of \$50,000. In this, the coldest profitable orchard region in the world, the *Anis* is noted as their hardest tree.

Many species of trees become dwarfed towards the northern limit of their growth. The most northern pines and spruces, birches and poplars, are but little shrubs; in the same way we find this *Anis* in Kazan, especially when growing on thin soil and without

cultivation, loaded with fine fruit, and this, evidently, not one of their first crops, and yet the trees not more than six feet high. We find little trees planted two, three, and even four together in a clump like stalks of corn, three or four to a hill, and these clumps ten feet apart each way. This is strictly true of some orchards, not so of others; for upon richer and moister soil, the trees grew somewhat larger, and, as we went southward, at each town we stayed at, we found the Anis larger, until, at Saratof, we saw Anis thirty-five years planted which had attained a diameter of trunk of ten inches. In nursery it is a slow and crooked grower such as nurserymen hate to grow and hate to sell after they have grown them. In orchard a slow grower. Trees in different places, pointed out as thirty years planted, seemed very small. In old orchards at Khvalinsk and elsewhere, it was considered the most long-lived tree. We saw there, trees seventy years at the very least. These were fourteen inches in diameter of trunk, branched low as the Anis usually is, and, though some large limbs had been removed some years ago, yet the trees were sound in trunk and top."

* * * * "We were always struck by the beauty, even when some distance off, of one variety of the Anis. This is the Anis Alui or Pink Anis, and, I suppose, the same as the Anis Rosovoi or Rose Anis spoken of at Simbirsk and other places on the Volga. It is an oblate apple of full medium size, or about the size of the Fameuse, the color of our Decarie, mostly a deep pink with a light blue bloom. In these dry climates we may expect high color. When we were on the Volga it was too early to taste it in good condition, and besides this, it is often picked too early, perhaps, to reach distant markets by a certain time. Whether it will color and ripen on its way to market, like a Duchess, or whether, like our St. Lawrence, it will almost cease to mature after it is picked from the tree, I cannot say. The grain is fine, the flesh white and firm. It is really a dessert apple of fine quality. It often sells at two roubles per pood, that is one dollar per thirty-six pounds, when poorer fruit is selling at thirty cents, and under Russian care it keeps till late winter or spring."

"*Anisovka*.—Under this name Mr. Shroeder tells us of a medium sized, flat, yellowish green apple, with bright red side, grown a good deal about Moscow, and said to be a very good dessert fruit that keeps a long time, in fact all winter. Farther south it would not keep so long."

* * * * *

"*Antonovka*.—This is the leading apple of the Russian steppes, the king apple of that vast prairie region from Tula to the south of Kharkof, from Kozlof to Kiev, a vast prairie region unsurpassed in fertility by any region on this continent. It is the leading apple over a larger section of country than any other in Europe, than any other apple I know of. No apple holds so high a rank above others in any large section of this continent; and yet if the Baldwin were equally hardy I would much prefer it."

"At Kursk we still find it their leading market fruit, and on the Bogdanoff estates, find it being planted in quantity as about the best investment the proprietors know of. Such investments scatter broadcast innumerable little dividends in the form of food and labor. What a blessing to a country is a horticultural aristocracy—it begets a horticultural peasantry, a home-loving, peace-loving, law-abiding peasantry. In Horticulture, we find the safest anchorage for a peasant population." * * * *

"At Warsaw, where the climate is a cold North German rather than a steppe climate, we find the *Antonovka* one of their leading apples, but not their best, and there not a late keeper. * * * In quality it is not quite like any apple I know. It may, certainly, be rated as second quality for eating and, I hope, first for cooking. But few of the best commercial apples of this continent are of first quality as dessert apples. * * * At Warsaw it rarely keeps past Christmas. At Moscow, Mr. Shroeder cautiously says, till January or February. In Central Russia it was often said till March, and, I think, even April was mentioned. I doubt if it will prove a much better keeper than our *Fameuse*."

How long an apple keeps depends very largely upon how it is kept. The Russians handle their fruit, pack it and keep it, with more care than we do. They seem to look upon an apple as a living thing, to be kept alive as long as possible. If allowed to ripen on the tree it has a rich melon flavor but then it will not keep. All apples in Russia picked for a distant market are picked rather earlier than we should pick them. When we arrived at Saratof, on September 11th, the apples were all picked and shipped to Moscow. At Tula, on September 18th, *Antonovka* was in huge piles in the orchards five feet wide, covered with basswood bark matting. At Orel we find what has not been shipped in an open shed in layers with straw between them."

"*Aport*.—This is the family of which our Alexander is a member, a large and widely scattered family and often of strong family type. No accurate notes seem to have been taken of the places where they live and thrive." * * * *

"It is named *Aport* because imported long ago from Oporto in Portugal, just as another Russian apple which long ago found its way into Virginia, comes back to Russia *via* Germany under the name of *Virginischer Rother*."

"I am not sure that we saw the Alexander in Russia, though I believe it to be grown there." * * * *

"*ARABKA (Arabskoe)*.—Under this name there are one or more apples of decided promise At Moscow, Mr. Shroeder tells us of a large conic apple of very deep color which is a long keeper. The tree he finds a little tender at Moscow, but says that it is grown a good deal in central Russia. * * * At Volsk, on the Volga, in latitude 52, we found in an orchard, about 12 trees in profuse bearing, of an apple known there as *Tchougounka*, which means cast-iron; the fruit was roundish, of a dark purplish red, covered with a light bloom, much like the *Blue Pearmain*. It was above medium in size, although the trees were so overloaded; a firm solid acid fruit said there to keep two years. It also has the merit of holding on to the tree so firmly, that I could hardly find a windfall. It and *Steklianka* were the only varieties in this orchard not yet picked, on 8th September." * * * *

"*Arcad*.—I am not sure that there is any apple in this family of special value. They are a family of early apples, sweetish, and of but medium size, but the trees have proved very hardy."

"*Beresinskoe*.—Mr. Shroeder speaks of this as a large whiteish apple with yellow side, flesh firm but breaking, not able to bear carriage well, but a very fine autumn dessert fruit.

"*Beriosovka*.—This we met and took a great fancy to in the Kozlof market. As we saw it there, it was a fruit of full medium size, oblate, red on one side in splashes and specks; very firm, yet breaking, very juicy, with a fine mingling of sub acid and sweetness. The seeds were black on 13th September, yet it seemed likely to keep two months." * * * *

"*BOROVINKA (Borovitski)* must be looked upon as a family name. It was a member of this family that, long ago, migrated to this

country and became known everywhere as the Duchess of Oldenburg. This apple we did not see in Russia. At Tenki, in the Government of Kazan, in a peasant orchard, we saw trees in full bearing of a fruit which both Mr. Budd and I looking carefully at it thought to be Duchess; but on tasting it we found it so fine in grain and so mildly acid, that we felt that no such difference in texture and flavor could result from change of soil and climate." * * *

"GRAND MOTHER (*Baboushkino*) is described by Mr. Shroeder as a beautiful bright red medium sized oblate apple of fine quality. At Voronesh, Mr. Fischer says it is a good and productive tree, and an excellent large sized apple that keeps till March. Mr. Regel describes it as an apple of first quality that keeps till May. What we saw under this name were above medium size, flat rather, with a large thick stalk; flesh white, firm, breaking, juicy, fine grained, unripe, but showing every sign of fine quality, and of being a long keeper. Its appearance is against it, yet these hardy long keepers deserve thorough trial."

"RED KOROSHAVKA (*Koroshavka Alui*) is one of those strikingly beautiful apples one cannot forget. It has the color of our Victoria, a bright deep pink, and any part not so colored is as nearly as possible pure white. It is usually of medium size, often above, regular in outline, and never ribbed like Pink Anis. Like Victoria, its flesh is a pure white, and on 29th August, firm, crude acid, not ripe enough to fairly judge. This tree, like the Anis, when grown in the North is dwarf in habit, and where broken down by weight of snow, sound at the heart, and evidently a young and abundant bearer. At Tenki it was said to keep till January."

"*Skrusapfel*.—Dr. Regel speaks of this as an excellent table apple that keeps until the following Summer, and says that the tree endures the coldest Winters at St. Petersburg, and has been grown at Moscow, Tula, &c. Mr. Shroeder says it is a medium or small-sized apple, striped (but perhaps this only on one side, I am not sure,) a very hardy tree, an apple of really good quality; good for dessert and cooking, that keeps sometimes till August. The tree has branches like a Scott's Winter, which cannot easily be torn out. The fruit, as we saw it, green, with a little dull red, beginning to appear on one side, and very heavy. Flesh greenish, juicy, rather tender, crude, and but very mildly acid, when ripe lacking acid one

would think, otherwise quite good. A good late keeper for cold climates."

"The *Zelonka Moldavka* of Voronesh is an apple I wish to draw special attention to. The specimen we had was large oblong, a solid apple with a texture somewhat like a Rhode Island Greening, firm, acid, with very little sweetness. We got it at Voronesh on 13th Sept., and this description was made when tasted at Warsaw on Oct. 4th. It had been kept in our apple bag but had not suffered. Mr. Fischer showed us trees which seemed hardy and healthy, the fruit has the points of a first-rate cooking apple, and is a fair eating apple, a variety of great promise."

ТИТОВКА, (Titus apple.)—A large handsome fruit to be seen in quantity, in all the markets of the Volga, and of Middle Russia. It looks like a large ribbed, elongated Duchess, and on account of its large size and attractive color, very salable and therefore valuable. At Simbirsk it is considered one of the most profitable. At Tenki, near Kazan, it is a success, both in nursery and orchard, and from what we saw would seem to have been grown there for many years. At Tula we see one very old tree of it, a survivor of an ancient orchard, killed by a severe winter many years ago. It is therefore a tree that thrives in the severest climates. It would not be safe to assume it to be quite as hardy as Anis of Antonovka, yet it is not very far from it. The flesh is coarse, but juicy and mildly acid, quite good, not at all disappointing, rather better than Duchess, because less acid. In season it is not one of the earliest, yet is a summer or late summer fruit." * * * *

Virginischer Rosenapfel.—It is strange how a fruit may wander to distant lands, and generations after, return to its native land unrecognized. We first saw this in the nursery of the Pomological School at Proskau, and Mr. Budd declared that it must be the "Fourth of July." We then looked up the cast of the fruit in the museum and so it seemed to be. Why should it have the name Virginia unless it had been there, and how in those early days get there except *via* England. Yes, we may suppose it to have been included in those importations from Russia, made during the lifetime of the late Andrew Knight, and thence found its way to Virginia. Its name becoming lost, it was grown westward and northward in America as the Fourth of July, and returns to Russia, the land of

its ancestors, even if not the land of its birth, as the *Virginischer Rosenapfel*."

"Of the coast apples in Russia I seem to know very little. We had no opportunity of seeing them in bearing. The climate is not our climate, yet experience is valuable. Dr Regel selected out of a longer list 41 kinds which he recommended, and out of these he marked ten kinds with double stars. These ten kinds are *Antonovka*, *Aport*, (autumn), *Borovinka*, *Belni Naliv*, *Red Summer Calville*, *Koritschnevoe* (*Zimmetapfel*), *Koritschnevoe Ananasnoe*, *Polosatoe Novgorodskoe*, *Skvosnoe Naliv*, *Skrinsapfel*, *Titovka* "

REPORT OF THE CORRESPONDING SECRETARY.

GRANVILLE FERNALD, OF HARRISON.

The year 1882 in our State, although disappointing the well-grounded expectations of the orchardists, has yet a lesson of encouragement to all, and it may be safe to assert that the faith in fruit culture as worthy to lead most other branches of farming, and thorough determination to make it so, is as well established in the minds of our farmers as any other sentiment or resolve.

A digest of the reports on the condition of general fruit-culture in the United States, submitted to the last meeting of the American Pomological Society at its session in Boston, in 1881, will show that in every State from Maine to Texas, and in many western and in all the Pacific States, the subject of fruit-culture is receiving increased attention, and is only next to wheat and corn-growing in the regards of the best and most intelligent agriculturists.

The last year opened with great promise of an abundant crop of fruits. If blossoms are a reliable indication of a fruitful year, we were certainly justified in expecting a rich harvest; but later on, certain causes conspired to blight the young growing fruit, and the hopes of the sanguine orchardist were sadly disappointed. Yet there remained some encouraging conditions, and spite of the small crop of inferior quality of fruit, a handsome display graced the tables of the annual exhibition, and the prices of apples since harvest time to the present have so stimulated the belief in the success of orcharding, that the aspects of fruit-growing at the present time

warrant us in asserting that at no past period has it stood on so stable a footing as now.

By a careful comparison of the advantages and disadvantages of Maine with other prominent fruit-growing States and territories, as revealed in the reports from diverse sections to the American Pomological Society, two years ago, it is certain that we have fewer of the obstacles to successful fruit-culture in Maine than exist in many States renowned for their fine climates and fertile soils. It is a fact that in nearly every State south of the latitude of southern Ohio, especially in those States near the Gulf of Mexico, disastrous frosts nearly every year, in March and April, destroy every sign and promise of fruit for the year. The winters are far more severe in Kentucky than in Maine in their effects on fruit trees. The committee from that State report several disadvantages suffered by orchardists there, as follows: "Chiefly among them are the different species of insects that prey upon the fruit and tree; climatic influences, such as scalding by the piercing rays of the summer sun, and the alternate freezing and thawing in winter."

If we examine the statements of expert witnesses from the various States west and south respecting obstacles to success in fruit-culture, we shall find that they have all the obstacles which retard our progress, and in some places, many besides. At Norfolk, Va., the pear-blight and a generally demoralized condition of the climate for eight or ten years, was the complaint. Ohio reports an ordeal of sudden and severe changes of weather—so cold, indeed, as to kill the hardy Snyder blackberry, and by contrast, a week of heat in midsummer recording 98° to 104°. The report further says: "Disease and insect depredations are the chief causes of failure. Climatic influences sometimes sweep away the entire crop. Apples, peaches, pears, cherries and plums, are all injured by the curculio.

* * * The scab affects the peach, pear and apple, sometimes so badly that they are entirely worthless." From Georgia, reports of spring frosts, borers and fungoid diseases affecting peach culture, phylloxera the grape, curculio the plum, with pear-blight, show that in that famed sunny region no exemption is enjoyed from many of the obstacles to success that afflict us. The reports from Arkansas and Indian Territory show great damage by frosts, severe drought, twig-blight of apple trees, and about a dozen varieties of depredating insects. In Texas, April frosts sometimes destroy the peaches and grape crops, while fungoid diseases of the apple and pear frequently

cause decay of the fruit. While New Mexico is reported as free from insect depredations or diseases affecting the fruit interest, yet the March and April frosts are noted as an obstacle to fruit-culture.

Many interesting and highly instructive suggestions are noticed in the various reports of transactions and discussions of other Horticultural societies. The veteran pomologist, William C. Strong of Brighton, Mass., in an address delivered before the State Horticultural Society, laments the "sore evil" which has afflicted every section of the land in the matter of numerous varieties of inferior fruits. He feelingly exclaims: "What immense injury has been done to pear-culture, for example, by the dissemination of second, third and fourth rate kinds which come to be only a vexation and a nuisance to the producer!" He makes a noteworthy confession in the declaration that "the nurserymen are answerable for this state of things." He furthermore condemns emphatically, the practice of "offering prizes for long lists of kinds;" and says to the society, "now let us publish the simple truth, that there are but few kinds worthy of general culture." In this expression of disapprobation of multiplying inferior kinds of fruits, the speaker was joined by Hon. Marshall P. Wilder, who said that in testing new varieties of fruits for many years past, he had expended twenty or thirty thousand dollars. Mr Wilder said,—referring to apples for exporting: "of all the apples exported from Boston, ninety per cent. are Baldwins."

The wide range of topics which are legitimate subjects of discussion and properly within the sphere of labor belonging to horticultural societies is worthy of the attention of this society. We find kindred organizations in other States working vigorously to promote other interests than those belonging merely to fruit growing. For instance, the subject of arboriculture—the planting of trees in forests or groves, or for the adornment of lawns, parks, streets and common highways, forms a prominent theme for discussion and treatment by original essays in several societies which are the largest and most influential on the continent.

The rapid destruction of our native forests and the increasing demand for timber and fuel in our country is a cause for much alarm to the industrial economist, and nowhere is the subject receiving more earnest attention than in the Dominion of Canada. The Government, seconded by the efforts of influential local societies, and by the arguments of some of the most intelligent citizens, is

taking active measures towards a conservation of the valuable timber resources of the various provinces, and it is also suggested to engage in the attempt to establish tree-growing on the extensive prairies of Manitoba. The able reports on this subject, with accompanying map, showing the northern limits of the principal forest trees of Canada, east of the Rocky Mountains, published in the transactions of the Montreal Horticultural Society and Fruit-growers' Association of the Province of Quebec for the year 1881, is a forcible reminder of a duty which our State owes to her citizens to initiate measures for the care and economical use of her remaining supply of timber. And it seems to be one of the appropriate functions of a society like our own to exercise its influence to educate the public mind on this most important of subjects pertaining to the agricultural and commercial prosperity of the State.

There are many powerful reasons why the subject of forestry and the planting and protection of trees should be a prominent matter of investigation. But it may be thought that our Society, under its present name and organization, cannot properly include that with all other topics belonging to the undoubted sphere of its work. If so, and it is believed to be desirable to enlarge its sphere of usefulness and employ it in a new line of duties, I think it can be easily accomplished by giving our society a new name, and by means of slight constitutional changes if necessary, endow it with ample power to devote itself to the betterment of some phases of our agriculture, from the consideration of which we are now virtually debarred.

Two years ago, your corresponding secretary was a member of a committee to consider the propriety of changing the title of this society from Maine Pomological Society to Maine Horticultural Society. It was subsequently reported that it was believed by said committee that any change of name of this society was inexpedient. Since that time, I think I have seen certain reasons why it might be for the advantage of our State and the industrial welfare of its people, that we might be empowered in some way to adapt and apply our energies to some branches of inquiry and labor, other than those strictly embraced in the special subject of Pomology.

The magnitude of the fruit growing and shipping operations in some of our northwesterly States, and the almost marvellous increase of the demand for our apples in foreign countries is exercising the minds of fruit-culturists of those States on the matter of

improving the present facilities for direct transportation of fruit from the wharves of the principal lake cities through the St. Lawrence to the Liverpool and London markets. In suggesting the importance of securing government appropriations to aid in enlarging certain inland channels of navigation for the passage of ocean steamers, by which their objects might be attained, the possibility of interference and opposition from those interested in the trans-shipment of western produce from the principal Atlantic ports, whence the bulk of our fruits now go forward by steam conveyance has occurred to them; as if the subject of speedy and cheap transportation of western fruits to foreign ports could be inimical to the interests of either the apple-growers of the eastern States or the proprietors of the ocean carrying-trade. Why we should wish to use any obstacles for the prevention of the economical transmission of fruit from the far west to Europe, I cannot comprehend. The excellent quality and well known reputation of Maine apples in distant markets render it unnecessary that we should feel any jealousy of the success of even the most highly favored sections in the matter of seeking a market for our own increasing products. Maine, with the maritime provinces of Canada, constitutes the very best located position for foreign commercial operations in fruit of any section of the continent.

It has moreover, all the essential requisites for growing the best fruits in unlimited abundance. A million barrels of the best quality of Baldwin apples per year is not an extravagant estimate of the capability of our State to raise for a foreign market within the next twenty-five years, if our farmers and orchardists improve well the advantages within their control. At the lowest probable price, that will be equal to an income of \$1,000,000 and at average annual prices, not much less than \$3,000,000.

A notable invention is reported from Montreal of interest to shippers of fruit to foreign ports, by which some of our tender and perishable fruits can be kept for months in good condition and even endure the risks of an ocean voyage to Europe. The inventor, Mr. George A. Cochrane, made a very satisfactory test of his process by putting away pears, apples and tomatoes about the 23d of September, which were mostly in excellent condition on the 6th of December. He also reported that he had transported melons, tomatoes and such like delicate fruits to the London market the past summer (1881) in perfect condition.

The following volumes of reports have been received, since the last annual meeting, to wit :

Proceedings of the eighteenth session of the American Pomological Society held in Boston, September 14th, 15th and 16th, 1881, from Hon. Marshall P. Wilder, President.

Transactions of the Massachusetts Horticultural Society for the year 1882. Part 1. from Robert Manning, Secretary.

Eleventh annual report of the Secretary of the State Horticultural Society of Michigan, 1881.

Seventh report of the Montreal Horticultural Society and Fruit-growers' Association of the Province of Quebec, for the year 1881.

The following paper was then read and followed by discussion :

ON THE RAISING OF HEALTHY AND HARDY ORCHARD STOCK.

BY J. E. BENNOCH, OF ORONO.

The subject that I have selected for this occasion is one which I think of great importance, and one that is hardly ever thought of, except by a few. Until within a very few years past, one seldom if ever heard the question asked concerning the raising of hardy trees, but of recent date inquiries come forth in regard to the causes of so many tender and worthless varieties, or generally of trees of any variety, and this has become a topic of much discussion and study. All know that in all orchards or grounds containing fruit trees, there are more or less tender and dying, when all ought or should be in a healthy and vigorous condition. In this state of things, time, labor and money are wasted. There is a cause as a rule in nature for all things, and there must be a cause for this deterioration, as I can place it under no other term ; and I shall endeavor to show to a great extent, if not fully, where the error lies, and the causes that produce this national waste and misfortune. I think the problem can be solved that will finally exclude and do away with degenerated and tender fruit stock, or at least in a measure.

Many are the disappointments in purchasing trees for hardy varieties, after a few seasons of care and trouble in watching their growth and waiting for promised results, to find that they are in a

feeble condition. One will tell you they need dressing, another will say your ground is not suitable; and you are at a loss to know what to do yourself, and at last will give up trying to raise any fruit or trees. In all the occupations of life study is required.

The breeder of animals is constantly studying for the improvement of his stock that he may gain valuable points over former years, first starting from the right source, the point is easily gained; so it is with the vegetable kingdom, it requires thought, study and experiment to arrive at a sure foundation. We expect losses to a greater or less degree in attaining what we seek; but perseverance will surely win. No person of sense would think of starting with sickly, degenerated stock in the animal kingdom, knowing or even thinking that they would produce healthy, robust results—if he did, I am quite sure his labor would be crowned with bitter disappointment. It is the same with all animated nature, and, as a rule, like begets like.

The present system of producing fruit stock is very much on the degenerating order. In order to produce good healthy fruit stock, the seed germ must be obtained from healthy native trees of as good quality as can be had. If you want to test the fruit and are seeking for improved varieties to be used for grafting purposes, you need not care so much. I should discard all seed from grafted fruit in order to produce healthy stock; you can test this experiment by planting a row of seed from a native tree by the side of a row of seed from grafted fruit, which will tell you which stands the winter the best. You can see a difference in the growth as to hardiness and tenderness,—you will find in ninety-nine cases in a hundred the natural fruit stock is the best: there is less winter killing, it resists the cold and piercing winds better than the stock from grafted seed.

Another thing: using stocks from grafted seed, and using scions from grafted trees, tends to degeneration, with no improvement as to hardiness; but, on the other hand, in using scions from grafted trees or stock, upon natural seed stock, is advancing one step toward hardiness, or rather a slight improvement in that direction; but if by chance, and there are possibilities of obtaining fine varieties of merit and worth, propagating from natural seed, place the scions on to natural fruit stock, and you are likely to meet with results desired. There is no doubt in my mind but this is a correct rule to produce good healthy trees; and I have no doubt but degen-

eracy commences by using grafted stock upon grafted stock, and by using seed from such stock, the result is further accomplished. We of course have good varieties from grafted seed, but generally there is some "out" with them. The St. Lawrence, supposed to be a seedling of the Famense, which to many is of fine flavor, has its defects: first, it spots, which is fatal to its character, it loses its flavor early, grows soft, and generally canker or dry rot. The tree is of a tender nature. I think the variety is one of the kind that is likely to run out like the Ortlý and some others, by continual grafting.

It requires the utmost care to raise pear seedlings from grafted stock seed. I expended twenty-two dollars for pear seed, and did not raise one single plant. This seed I had from different parties. I did not give up trying. I was in Boston and went into the seed department at Fanenil Hall to purchase one more quarter of a pound. The dealer had it on hand but told me he would not warrant it to grow, but that he knew where he could procure what he called "wild seed." He explained to me that it was from the native natural tree, and that he would send me some as soon as he obtained it, which he did, only one-half ounce being my share among others to whom he had promised it. The result was, I raised a crop of fine seedlings, only a very few showed any signs of tenderness.

There is one thing more that produces tender trees, and a verdict of "guilty" should be pronounced on the nurseryman who raises and sends them out for sale, not as nature planned, but as man sought to improve them by cutting off their tap root. After using the grafted seed they resort to this practice claiming that it is the very life of the tree, then by applying strong dressing causing a forced growth which cannot be otherwise than tender. By growing so quickly it does not give time to ripen up its wood. In this direction come thousands of tender trees. This is not all that nurserymen are guilty of; in producing tender stock they take slips of roots six to eight inches long and set on to the growing end of a scion. This is done in work-shops through the winter months, being placed in sand in a cool cellar until wanted for setting or planting in the spring, which is done in a rich plat of ground for the purpose—a perfect hot-bed. This is another way of producing tender stock. These things are evils of a bad order,—I see no way to remedy it, but for each one to raise his own trees. You can get fruit sooner and you will know that by raising your own trees, what you have, by graft-

ing at three years old with scions from bearing trees, you will not have to wait long for fruit. I think by doing this, an improvement will be made in orcharding that will result in a great degree of hardiness to the trees, and that is what all growers of fruit should aim for, and not be obliged to buy from Western parties and not know what they are purchasing. Trees for orchards would be better to plant or set near the locality where they are raised. It is not a hard task to raise a small nursery of two thousand or more, or less, as may be wanted. The sooner our feeble and half hardy varieties are cut down and replaced by healthy natives, re-grafted to good valuable sorts, the better it will be for all concerned. The idea of planting out anything in the fruit line under the representation of being "half hardy," is not what Maine fruit growers want. We want the pure, hardy stocks to begin with, and I have no doubt the results will be acceptable, and all will enjoy the fruits of their labor.

I think in all localities there are some good valuable native varieties that should be disseminated, and propagators of such could exchange with their neighbors and others. Most people will be seeking after new varieties and they will always be wanted by amateurs and small orchardists, of which there are many. The commercial fruit grower is better off with less varieties, but if good sorts present themselves, they should be cared for, experimented with and disseminated. We have of late, many new kinds that are already making their mark, such as Wealthy, Rolfe, etc.; also some that are being introduced that I fear will turn out to be something that many of us knew of before. One for instance, the New Brunswick; and I very much have my doubts in regard to the McIntosh Red, I have raised what I had for the variety for the past two years and I feel very well acquainted with it. Our aim is for hardy trees and generous producing orchards, and it is our duty to try and make the improvement, as I very well know it can be accomplished by study and work, and these two things can conquer all things as they have ever done.

T. M. MERRILL, West Gloucester. From Mr Bennoch's paper I get the impression that he does not favor imported trees—those raised elsewhere than in this State. I am interested in this business. If one locality is better than another, I would like to get light. I would like to hear from some practical orchardist who has had

experience in growing orchards and fruit, and who has obtained fruit trees from different localities.

BENNOCH. Thousands of trees have been brought into Penobscot county, and I will venture to say that very few of them are in a flourishing condition. I think our own trees are best. I don't believe in buying trees of foreign growers.

THE PRESIDENT. A few years ago I set out about a hundred trees which were raised by Mr. E. K. Whitney of Harrison. Never in my experience (and I have set a great many trees, of all sorts) have I seen so fine trees as he sent me. Of the whole number of trees there was not a root broken or cut. The roots were coiled up and packed in moss, and when the trees arrived they were all ready for planting. How he managed to take them up and pack them so skilfully I cannot understand. Every one of them lived; which I attribute to the great care with which they were raised and handled. I am sorry to say Mr. Whitney has gone out of the business. I have sometimes ordered trees of agents, and must confess that I have not saved one in ten of them.

MR. DOW. I think the great trouble is that generally trees are not taken up and packed properly. I have bought a great many which have come in bad condition. Many of the roots were cut off. I am now trying Maine trees and they are doing well.

CAPT. F. C. JORDAN, Brunswick. I have set western trees and thought they were as good as Maine trees, but am now satisfied they are not. I had fifty from Mr. Alfred Smith of Monmouth, mostly Baldwins, several years ago; they are all alive and have grown well. I had fifty more from Mr. Whitney of Harrison, the same year; *they* are all alive. I found all good roots. Of all the trees I have had from Maine, I have never lost one. Of the western trees, last winter and last summer, I lost twelve of the finest trees I had. Two Nonesuch died in the winter and the rest are all dying. I had twenty-five Baldwins from abroad, the best part of them died last spring and summer. That looks as if something was the matter with western trees, because they are on the same piece of ground, received the same treatment and were set about the same time. I set them all out myself and know they were carefully set out; they are of the same varieties. I shall not buy any more New York trees. I think Maine is the right place for us to get trees.

S. F. STROUT, West Falmouth. I am a new beginner. Last spring, somebody visited me with a picture book, and I subscribed

for and now find myself possessed of a large number of Ben Davis and another kind which I will not mention. I want to know what to do. I have come quite a distance to attend this meeting. I want to know about this matter of grafting, especially the system of double-working; perhaps it may be a necessity for me to re-top some Ben Davis.

The PRESIDENT. This is a pertinent question. I once had a large number of trees of early varieties, which I wished to change to Bellflowers. I wrote to Mr. C. G. Atkins, who is constantly experimenting in such matters. He said it was a mooted point, and many persons thought the character of the stock might more or less influence the scion; he was not prepared to say.

S. RICHARDSON. I should like to have some one give us information upon that point. I have Duchess of Oldenburgh and Ben Davis trees which I want to graft to other kinds.

GILBERT. I can say to the gentlemen that they might have done a great deal worse than to plant the Ben Davis, for that is one of the best stocks to start with that can be planted. They have only to change it into what they want. What they want will depend in a great measure on soil and location. If they have healthy stock they have not made a mistake, so far. I wish to say a word about hardy nursery stock, which I understand to be the subject before the Society for discussion at this time. I no more think of losing an apple tree set out in my orchard than I do of one of my family dying. Of course sickness enters our family circles, and people die of old age; but I say, unless some accident befalls it, I no more think of failing to grow an orchard tree than I do of failing with my other crops. It is as certain as my hill of corn or as any of my farming operations. It is requisite to start with good stock and put it upon good soil. What is good stock? One that is healthy. We have had a great deal of bad and unhealthy stock sold out of nurseries in the State of Maine. The soil usually devoted to nursery growing, especially the commercial stock, designed for sale, has been alluvial soil; the better kind of plains land. These lands have been used for that purpose because the soil was mellow and easily worked. When you come to transplant trees grown on such soil to the high-land soil where our best orchards grow, not a quarter of them will survive in a healthy condition, except in very favorable seasons. No order ever taken in Maine, for trees grown on such

soil, has proved valuable, or ever will. Yet I know of hundreds of acres of nursery stock standing to-day in Maine on just that kind of soil. If you want a healthy stock, grow a healthy tree on your high, rocky, natural soil. I was glad to hear in the paper by Mr. Bennoch a recommendation to farmers to grow their own trees. I will not dwell upon that point, but you can see the advantage of growing them upon soil where you can produce a tree which will be healthy after it is grown. You may take such stock as that, take the Ben Davis; take your Haas; take many others of those varieties which people have had forced upon them at fancy prices, and graft them with what you want. Now what do you want? I don't know of how many of the celebrated orchardists of this State I have asked this question: "What are your most profitable varieties of apples?" and have almost invariably received this "old foggy" answer: "Baldwin R. I. Greening, Bellflower"—and there they stop. If that is the sum of the wisdom of the best orchardists of Maine, that they obtain the best results from an orchard of Baldwins, Bellflowers, and R. I. Greenings, why in the name of Heaven are we chasing after russets, crab apples, and the Lord knows what? Is it business-like? Is it sensible? We want to apply our good common sense to this question as we do to other matters where our business is successful, and not be in trouble all the time about new things.

QUESTION. Would you not add Northern Spy and Roxbury Russet?

GILBERT. I was talking with a gentleman who has been a successful farmer in every sense of the word, in the southern part of Penobscot county, and he said the most profitable enterprise he ever engaged in was raising Baldwin apples. This winter it was my privilege to see a very creditable exhibition of fruit. I met a man well versed in fruit-growing, and asked him what were the most profitable varieties for commercial purposes? And the answer was, "Baldwins, R. I. Greenings, Bellflowers." I went into the southern part of Franklin county and talked with successful orchardists there. I raised the question, "What is the most profitable *single* variety of fruit for commercial purposes in Franklin county?" They said "the Baldwin." I asked what would you add? *Answer.* "R. I. Greenings and Bellflowers, and the Roxbury Russet in localities where the soil is adapted to it." That to a young American, or to a man starting out for the first time in fruit growing, would sound old foggyish; but within the last fifty or seventy-five years we have been

experimenting in this country with two or three thousand varieties of apples, and we have not yet found anything that excels the good old varieties, Baldwins, R. I. Greenings and Bellflowers. The wisdom of this State seems settled upon that point.

STROUT. I have been told that the Ben Davis would be profitable to raise for a late keeper.

GILBERT. Good looks will go a great ways sometimes, but if I was situated as you are I should not dare to base an expectation on a market fruit so inferior in quality as the Ben Davis. We do not care so much for extremely late keeping apples as we have done in the past, because we get early apples from the south in better condition than formerly. They will be better and better as means of transportation are improved. We don't want to keep apples after the first of July, because new apples come then. The market does not call for old apples in August; hence an extremely late keeping apple may not sell upon that quality alone.

QUESTION. Are there nurseries in this State where we can procure such trees as we want for high land?

GILBERT. I cannot answer the question with certainty. I do know of some good nurseries that are putting out good trees; but how many, I have no means of knowing.

Many of our nurserymen have given up because they could not compete successfully with the western nurserymen. These sharp men, who make a special business of making sales, get the field, so the business has greatly failed, and every orchardist had better take a good piece of ground and raise for himself a patch of trees, and take good care of them, keeping the ground clean, as a supply to draw from to enlarge his orchard, and thus keep his stock good.

The SECRETARY. I have only a word to say. I do not believe it makes much difference whether a tree is grown in Maine, Massachusetts, Connecticut, or New York. I do not believe it is a question *where* it is grown, so much as *how* it is grown; I do not understand that this Society has undertaken. (although it has done what it could to encourage the production of Maine trees as a home industry,) or has gone so far as to say that Maine is at present producing all the trees it wants; nor that the Society takes the position that a tree *must* be grown in Maine. The important question is, *how* the tree is grown, how it is transplanted; how it is cared for in the nursery; *not* where. And for the information of everybody who asks for information, we designed at this meeting to ask

nurserymen of the State to make definite returns to us of what they had for sale, and what they would have in the future, that we might publish a definite statement to answer such questions as gentlemen ask. This has not been accomplished; but I think we can at this meeting give such notice to the nurserymen in the State as to induce them to make returns which can be published hereafter in our proceedings. If we can, it is desirable that we should do it. We want to give them a gratuitous advertisement, if they will furnish us the information.

MERRILL. I think it is the worst thing we can do to recommend growing trees for our own use. We may get a good many ideas by growing trees that will be profitable, as fruit-growers. I find the best orchards in the State, or as good as any, coming from western New York, raised by men who have had thirty or forty years experience. I am considerably indebted to New York and Pennsylvania men for things I have learned in fruit growing. I think when we discard these men we are giving ourselves away.

The PRESIDENT. These trees are raised in mellow soil, and grow rapidly. Take these trees and transport them long distances, tied up a month before setting out, then exposed to cold winds, and set them on hard soil, and they cannot do well.

JORDAN. In speaking of western trees, I do not mean to say there are no good western trees. The trees I had of Whitney were grafted in the limbs; also of Smith. New York trees are grafted in the butt; they die easily—don't seem to be hardy. In the New York trees I didn't see anything but the graft. I have no trouble about making one of those trees live a year or two, but cold winters kill them. I don't think it makes any difference where the root of a little tree is grown; I think it will grow as well in one place as another.

GILBERT. I dislike to have this meeting adjourn without repudiating any sweeping assertions with regard to the worthlessness of New York or Maine trees. I do not quarrel with nurserymen, whether they grow trees in Maine or New York. I have repeatedly stated that in order to secure success we must have *good trees* to start with. If the gentleman who denounces Maine nursery trees bases his judgment upon the trees sold and offered for sale for several years past at Mechanic Falls, by a person celebrated in connection with the "scythe sharpener," I should agree with him.

Gentlemen: the only tree that I have lost in the last twenty-five years, dying without any apparent cause, in my orchard, was a purchased tree. Nearly all of my trees were grown in Maine from the seed, and I could point you to thousands grown in the same way, and planted and now doing perfectly satisfactory duty. Many of you are acquainted with the locality of North Monmouth, celebrated for its thrifty orchards. They are grown in the way I have recommended; grown in Maine and transplanted; making some of the best orchards in the State. Examine the splendid orchard on the grounds of the Insane Hospital, Augusta, and you will see only trees grown from the seed in the State of Maine. To leave the impression that none of our Maine grown trees are good for anything would be most unjust. I make no issue about the comparative merits of western trees; but I can cite you to some of our best orchards as having been grown in this State. I know men don't want to wait six years for trees to grow from the seed, but gentlemen if you are going into the orchard business, and live so long, in six years from now you will want to set more trees, and if you don't plant the seeds, you must purchase trees. So if you plant a nursery this spring, you will find use for the trees and your neighbors will want some. You will be adding to the wealth of your neighborhood and doing good for the world, if your trees are well grown, on suitable soil.

DISCUSSIONS ON SOME VARIETIES OF APPLES.

Golden Russets. GILBERT. Allusion was made in Dr. Hoskins' paper on the nomenclature of russets, to the Golden Russet of western New York, as being a remarkable bearer,—and it was recommended for cultivation. I would like to hear from members on that point,—especially from those of the northern part of the State. I should take some exceptions to the high recommendation given to it.

In the first place it will be well to set ourselves right as to the variety which is meant. There are several varieties of apples introduced from western New York, under the name of Golden Russet. The one which I understand to be referred to by Dr. Hoskins bears a high reputation in western New York. [Exhibits specimens from the exhibition table.] It is grown extensively in this county and throughout the State. It grows on the twigs, which are slender and quite naked until near the ends,—hanging on the tree in a drooping form. The fruit is not very plentiful on the tree, one single apple

in a place,—not in clusters. You all know what the result is where apples grow in that manner. The tree never yields *barrels* of fruit. They should grow in clusters,—load up the tree—if you are to get a large number of barrels. I don't know what the experience of others has been, but in my experience, and in the observation of hundreds of orchards in this State I never have seen a tree of that variety that I called well loaded with fruit. Yet it is a passably good fruit, for the reason that it is a very late keeper and we have but *few* late keepers; consequently if you want a very late keeping apple for home use it may be desirable to introduce this; but in my judgment it will not bear so high a recommendation as the paper gave it. With regard to its extreme hardiness, I am not able to corroborate or deny the claim made. It is generally called hardy, and does passably well along our northern borders.

There is another Golden Russet, introduced from the same locality as the one I have just spoken of. This is regular in shape not tapering like the other; completely covered with russet; flesh white; are of passable quality, and will keep until June when barrelled carefully so it will not shrivel.

There is another apple, which I now hold in my hand, [exhibits specimens] introduced from New York as a Golden Russet, but as worthless as worthless can be. This tree grows differently; it loads itself with fruit, growing all up and down upon the branches, from stem to top. As it approaches the top, the fruit grows smaller, and by the time you get half way down the limb, they are inferior in size and quality. It is important to keep in mind the distinction between these varieties,—to know what we are buying and for what purpose; and to avoid getting what we do not want.

Fall Queen, or *Haas*. Inquiry was made concerning this variety, and the Secretary read from the description given in Downing's First Appendix, page 10:

“Originated near St. Louis, Mo. It was at first called Gros Pommier, but now generally Fall Queen or Haas. * * Very popular through most of the West and Southwest as a profitable market fruit, and for family use. Tree hardy, very vigorous, upright, forming a beautiful symmetric head; an early, annual, and abundant bearer. Fruit medium to large, oblate, slightly conical, angular or slightly ribbed; skin smooth, pale greenish yellow, shaded nearly over the whole surface with light and dark red, some rather obscure splashes and stripes, and a few light dots;

stalk short, small; cavity medium, a little greenish; calyx closed; basin small or medium, slightly corrugated; flesh quite white, fine, often stained next the skin, and sometimes through the flesh; tender, very juicy, vinous, brisk sub-acid; good to very good; core medium or large. September, October."

W. P. ATHERTON, Hallowell. I have a tree of this variety, which was set about three years ago. The tree appears to be very hardy and a rapid grower. The first year it fruited the fruit was small and unsatisfactory, but last year it bore some good specimens. It is an autumn fruit, and we do not need it. I think it does well in New York, but in Maine we do not want it.

S. R. SWEETSER, Cumberland Centre. I have found the Haas apple good for nothing,—the same in my neighbors' orchards as my own. It is not worth gathering. I should call it as mean a fall apple as the Ben Davis is for a winter one.

PIERSON. I have the Haas grafted into a Siberian crab, standing in a sand bank. It has borne two years,—this year large and fine specimens,—dark red, larger than the Baldwin, and a good dessert apple. I should advise any one who has Siberian crabs to graft them with it.

MERRILL. The Haas should not be set in clayey soil, but it grows well on sand. It is *iron-clad*, hardy as the Ben Davis and a better apple to keep, but is quite mellow in the fall. I gathered mine late, and they are sound at the present time.

RICHARDSON. If I wanted seedling stocks, I would sow seed of the Haas; but after four years' trial, I am obliged to condemn the fruit. I have not been satisfied with it. It is a splendid growing and hardy stock,—the best in my orchard, as far as that is concerned.

Newtown Pippin. SWEETSER. I have specimens here which agree with Cole's description; but it is not a good bearer, and I do not consider it a profitable variety.

Peck's Pleasant. The PRESIDENT. One of the most delicious apples.

MERRILL. I think it is a rather moderate bearer. It has been extensively raised in western New York and is regarded as a valuable fruit.

IRA E. GETCHELL, Winslow. I consider it one of my best apples. It is a good bearer, bearing every year. The wood is very hard

and strong. [In answer to a question]—perhaps it is liable to overbear, rendering the fruit small.

CHARLES S. POPE, Manchester. It is a very nice apple for some purposes, but not profitable for market.

Esopus Spitzenburgh. The PRESIDENT. This apple, as grown here, is of fair quality, but no better than the Baldwin. In New York, it is totally different, and very delicious.

Red Canada. POPE. Very hardy, but does not belong to the class called “iron clads.”

Baldwin. W. B. FERGUSON, Dixmont. Allow me to say a word in relation to the Baldwin. I raise many kinds of apples. In my vicinity the Baldwin is *the* apple, thoroughly hardy (that is, in Penobscot county.) I have known Baldwins there ever since I have known anything, and still they are bearing. I grafted Baldwins twenty-five years ago and they are now vigorous, healthy and prolific. I would’nt give one Baldwin tree for a whole row of your “iron clads,” with half of the Russets thrown in.

The PRESIDENT. I advise everybody who has a soil and location which suits the Baldwin, to raise it extensively, but if other apples do better, raise *them*. Several years ago I lost a great many Baldwin trees by winter killing. They were not upon good land, and I afterwards neglected those that survived,—but finally thought I would try them again. I went to work on my Baldwin trees, and have been amazed at the result. The trees are remarkably healthy and have borne large crops of very fine fruit. I have not lost any trees since that time.

COMMITTEES APPOINTED.

Voted, That a committee be appointed by the chair to take into consideration the subject of Russets, with reference to their nomenclature and the merits or value of the different kinds, and make report, with such recommendations as they see fit, at a future meeting.

The President appointed as said committee Messrs. Z. A. Gilbert, Charles S. Pope and W. P. Atherton.

Voted, That a committee be appointed by the chair to examine the fruit exhibited at this meeting, and make report with their recommendation as to the award of premiums.

The President appointed as said committee Messrs. A. E. Andrews, W. H. Pierson and C. A. Dow.

Adjourned.

THE EVENING SESSION

was devoted chiefly to a lecture by Mr. S. L. Boardman, under the direction of the Board of Agriculture, on "How to elevate the Standard of Maine Farming."

Adjourned.

SECOND DAY, Wednesday, January 31.

Met at 9 o'clock, A. M.

The morning hour was occupied with the transaction of business, postponed from the annual meeting in September.

The Treasurer presented his report for the year 1882, as follows:

GEORGE B. SAWYER, TREASURER,

IN ACCOUNT WITH MAINE STATE POMOLOGICAL SOCIETY.

DR.

To cash in the treasury, January 1, 1882.....	\$25 03
amount on deposit in Wiscasset Savings Bank.....	344 40
“ received from the State, bounty for 1881.....	500 00
“ “ of life members.....	40 00
“ “ annual members.....	35 00
“ “ State Agricultural Society....	325 00
“ “ from donations.....	102 00
“ “ sales of fruit, &c.....	7 28
“ “ for interest.....	15 49
	<hr/> \$1,394 20

CR.

By amount paid loan of 1881.....	\$200 00
“ “ interest on loans.....	12 73
“ “ orders of Executive Committee.....	248 52
“ “ premiums of 1881, balance.....	120 00
“ “ “ winter meeting, 1882.....	38 50
“ “ “ annual exhibition, 1882.....	331 00
“ on deposit in Wiscasset Savings Bank.....	344 40
By cash in treasury, December 30, 1882... ..	99 05
	<hr/> \$1,394 20

GEORGE B. SAWYER, *Treasurer.*

WISCASSET, December 30, 1882.

The report of the Executive Committee, for the year 1882, was presented, as follows :

To the Members of the Maine State Pomological Society:

The Executive Committee hereby report that they have examined the foregoing account of the Treasurer, for the year 1882, and have found the same to be correctly stated and properly vouched.

That they have drawn orders on the Treasurer during the year, to the amount of \$248.52, for the following objects, viz:

Expenses of winter meeting, 1882.....	\$75 22	
“ annual exhibition, 1882.....	154 54	
Incidental expenses.....	18 76	
	<hr/>	\$248 52

Statement of the financial condition of the Society, December 30, 1882:

ASSETS.		
Cash in the treasury	\$99 05	
Amount due from the State, bounty for 1882.....	500 00	
Property owned by the Society, estimated	100 00	
	<hr/>	\$699 05
LIABILITIES.		
Amount due on loan	\$140 00	
“ of unpaid orders.....	97 53	
“ “ premiums of 1882	234 50	
Balance due permanent fund.....	375 60	
Other liabilities, and bills not rendered, estimated.....	250 00	
	<hr/>	\$1,097 63

(Deficiency of assets, \$398.58.)

PERMANENT FUND.

CR.		
By fees of 72 life members.....		\$720 00
DR.		
To amount on deposit in Savings Bank.....	\$344 40	
balance due from Society.....	375 60	
	<hr/>	\$720 00

Respectfully submitted,

GEORGE B. SAWYER, *for Executive Committee.*

The foregoing reports were severally accepted.

Voted, That the Secretary be paid a salary of two hundred dollars per annum for his services.

Proceeded to the election of officers. Messrs. J. E. Bennoch and S. R. Sweetser were appointed as a committee to receive and count the votes.

The election resulted as follows :

For President—Robert H. Gardiner of Gardiner.

For Vice Presidents—Stillman W. Shaw of Minot,
S. C. Harlow of Bangor.

For Secretary and Treasurer—George B. Sawyer of Wiscasset.

For members of the Executive Committee—(in addition to the President and Secretary,) Samuel Rolfe of Portland, Charles S. Pope of Manchester, Henry McLanghlin of Bangor.

For Corresponding Secretary—Granville Fernald of Harrison.

For Trustees :

Androscoggin county—D. J. Briggs, South Turner.

Aroostook “ Henry Tilley, Castle Hill.

Cumberland “ S. F. Strout, Falmouth.

Franklin “ S. R. Leland, Farmington.

Hancock “ Charles G. Atkins, Bucksport.

Kennebec “ W. P. Atherton, Hallowell.

Knox “ Elmas Hoffses, Warren.

Lincoln “ H. J. A. Simmons, Waldoborough.

Oxford “ N. T. True, Bethel.

Penobscot “ J. E. Bennoch, Orono.

Piscataquis “ H. A. Robinson, Foxcroft.

Sagadahoc “ H. S. Carey, Topsham.

Somerset “ James S. Hoxie, North Fairfield.

Waldo “ D. L. Pitcher, Belfast.

Washington “ H. A. Sprague, Charlotte.

York “ John Hanscom, Saco.

Then proceeded with the reading of papers ; the first being on

VEGETABLE AND SEED GROWING.

BY WILLIAM DUMONT, OF WEST GLOUCESTER.

In presenting this paper, it is not my intention to advance any new ideas, but simply to remind my fellow farmers of the importance of growing our own seeds, more especially those intended for the garden.

The farmers of this State pay out, annually, a large sum to seed raisers of other States, which ought to be kept at home. The

greater part of these seeds sown here are for raising vegetables to be consumed as such, and it is an established fact that northern grown seeds are vastly superior to those grown either in the south or west. The onion, for instance, for the seed of which any farmer would rather pay a dollar a pound for Maine grown seed than fifty cents for the same variety grown in Pennsylvania. The same holds good with other kinds, but probably not to so great an extent.

Our State has a good reputation for all its products in the south, west, and even across the Atlantic. Wherever you find them they almost invariably lead the market. The same might be said of her vegetable seeds, but they must first be grown and put in the market.

The demand for garden seeds is increasing year by year and more are raised to meet this demand; and why should not Maine increase her product? The time was, and that not many years since, when Maine produced all the seed sown within her borders, and it ought to be the case now. But go into our seed stores,—go into the country store on the cross roads throughout the State, and ask to be shown some vegetable seeds,—and how many will show you Maine grown seeds? Very, *very* few. I presume there are as many seeds raised in our State as formerly; but as the demand increased, our seedsmen were obliged to get their full supplies from other States.

It might not pay each farmer to raise seeds and put them up in small retail packages; but there are several seedsmen in the State that do a wholesale business, and willingly pay a remunerative price for good seed, but cannot always get a supply without going abroad. But to be successful, we must start with good, reliable seeds, and varieties for which there is a demand. Then for seed raising, reserve only the very best, and thus we may be improving the variety every year.

For winter storage for roots intended to be set in the spring, generally a good amount can be stored in the cellar; but for those who lack such room and even those who do not, a very convenient way is to dig pits on or near the plot of ground to be planted, providing it is well drained, for this is most essential. They need not necessarily be very deep, two feet will answer as well as deeper, for the roots may be heaped up and covered with straw, chaff, evergreen boughs, or anything of like nature, with the soil thrown over all to the depth of a foot or more, and they will come out in the spring in prime condition. The onion need not be pitted, but can

be kept in any outhouse, well buried in chaff or straw, with a foot or more of it both over and under them, so that the frost may come out gradually as warm weather approaches.

In culling out the inferior roots the greatest care should be exercised that none but the very best be set. There is always a demand in our stock barns for all inferior lots that are not fit for setting, which sometimes are worth nearly as much as the cost of the whole crop. The setting of the roots and care while growing the seeds, is as simple as the growing of a crop of corn or potatoes, and farmers of ordinary intelligence will succeed if they put their minds to it. The cleaning of the seed can be done in the fall after the pressing outdoor work is over.

Very few farmers realize the importance of a good crop of squashes, for aside from its being a healthy article of diet for both man and beast, the seed will often sell for more than the cost of raising the whole crop. Thus while raising seed for market, we are at the same time furnishing our tables and stock with an abundance of healthful and nutritious vegetables, without impoverishing the farm.

Let our Maine farmers consider these ideas, and if they do not feel to raise seed for market, they can grow enough for home demands. But if they should put hundreds of tons into the markets of our own and other States, we should see the same results as in her other products. They will be sought after above all others. Well may our State feel proud of her motto, "Dirigo," for surely she does direct and lead in many ways.

PIERSON. I have thought considerably about the matter of seeds. Last spring I bought a package of early peas. They were raised in Michigan. When I opened them, I found they had all been injured by the pea weevil. I sowed the package in two rows about $1\frac{1}{2}$ rods long. But very few of them came up, owing to the weevil. I found the peas had been sold at the rate of \$48 a bushel, which I thought was rather steep for a farmer to pay. It was quite a large package but the peas were few. So it is with packages of seeds; as the paper grows larger, the amount of seeds grows less. It has occurred to me that it is just as easy for every farmer to raise his own vegetable seeds and tubers. He can set the roots in the spring, and with a little care raise his seed and not be dependent upon those who raise and put upon the market such inferior seeds at exorbitant prices. Seeds raised at home are so much better than the seeds in

the market. Every one should be in the habit of raising his own seeds.

I wish to call attention to the matter of grass seed. The foul seeds we have purchased in our grass seed have been of immense damage to the fields. There is a new weed that has appeared within a few years; that is the wild carrot. It is one of the worst weeds we have. The prairie sunflower is an abominable pest. It is a yellow weed a little larger than white weed; it will stick in the ground year after year. This wild carrot spreads over the ground. It is not more than five years since I first saw it, in a trip from Vassalboro' to Winthrop. Since then it has increased rapidly, until many of the fields in Vassalboro' are entirely white with it. [In answer to question.] I do not know how it was introduced, unless by purchasing grass seed.

THE OLD AND NEW METHODS OF DRYING FRUIT.

BY E. N. PERRY, OF PORTLAND.

The request coming to me through the Hon. C. J. Gilman, from the Maine State Pomological Society to prepare a paper on the fruit growing interests of Maine, is eminently a reasonable one, and as far as I am able my interest in the subject will prompt me to furnish the paper requested.

I regard our State as among the best for fruit growing and in that interest capable of occupying a leading position and stimulated by increased and improved facilities for manufacture and preservation, is sure to take such a position.

Much has already been accomplished through your Society and other instrumentalities in the line of improvement, and much yet remains to be done. The comparative value of the various methods of culture, preservation and manufacture and their attendant results can be seen most clearly by a comparison of the present with the past.

Once orchards were set, and little more was done until some kind of fruit appeared, some good and some good for nothing, and all alike the natural production from the seed. Hence trees were permitted to occupy their position for generations, undisturbed, to vegetate or die without care, culture or little attention of any kind

except at gathering time. A portion of the fruit thus produced was prepared for winter by drying, a portion manufactured into cider and a large portion fed to cattle and swine or suffered to decay where it had fallen.

The method of drying was almost exclusively used among the farmers to preserve their winter stock. Let us look in upon the process, say fifty years ago. Towards nightfall a few baskets of the fairest and best of the apples were gathered and brought into the kitchen, and after the members of the family gathered from their daily employment the evening was spent in apple paring; father, mother, brothers and sisters, each with knife in hand, commence the tedious operation. Each apple was taken singly, slowly peeled by hand, cut in quarters, the core removed and passed to the younger children for stringing. This process was accompanied at every step by litter and weariness, and absorbing the time of the whole family. And not of a single evening only, but for weeks shutting away more congenial and profitable employment. The united efforts of an ordinary family could prepare for drying perhaps five bushels in an evening. But the preparation of the fruit for drying was by no means the end of the tedious process. Poles must be erected in a sunny place, the fruit carried out mornings and brought in evenings for several days, perhaps weeks, before suitably dried. For the sun being depended upon for drying, the process was stopped on cloudy weather, and at the prospect the fruit must be returned to shelter. The result of all this labor, care and time was an average of say five pounds of dried apple to the bushel, worth in barter five cents per pound, making an aggregate of twenty-five cents per bushel for the best of the fruit. Or more concisely, a family of five prepare for drying five bushels of fruit per evening. A large amount of time must be consumed in clearing away litter, attending the drying, packing and carrying to market, making a total of forty hours' time, equal to four days of ten hours' each for twenty-five pounds of dried fruit. This could be sold on an average of five cents per pound, making one dollar and twenty-five cents for four days' time,—thirty-one and one-fourth cents per day, leaving nothing for the fruit. If we call the fruit twenty-five cents per bushel nothing remains for labor. Some improvements were made by introducing simple machinery for the more rapid preparation of the fruit, and some in the fruit itself by better

culture and occasional grafting of better qualities ; but the process of drying remained essentially the same until very recently.

Another fact ; as the drying process must be carried on by exposure to the sun and wind, dust was liberally added to the generous supply of filth furnished by insects attracted to the sunny exposure and drying fruit. Nor was this all ; decay often occurred in the middle of the fruit, while the sugar was largely converted into an acid for consumption—a dirty, woody, acid compound, resembling apple in some respects, but robbed of its most valuable qualities. These facts were sufficient ground for the feeling, then almost universal throughout the State, that orchards were of little value to the farmers as a source of revenue ; for it was literally true. But the more thoughtful and enterprising turned their attention to the cultivation of a better quality of fruit, both by grafting and by planting better varieties, thus seeking to find an outlet for their industries by the sale of fruit in its natural state.

The enterprise met largely with success, and the commercial value rapidly increased and the products of the orchards became a revenue to the farmers. But only the best fruit was of marketable value, and a large percentage of an inferior quality was left to be dried, manufactured into cider, fed to stock or allowed to decay. This was the state of the industry up to a very recent date. But the method of evaporation is changing the entire process of disposal of the fruit, and bids fair to change the entire commercial value of the fruit crop of the State. By this new process all the litter which formerly incumbered the farmer's dwelling is removed to places where it can be easily and cheaply cared for. Thus the farmer and his family are left free with their evenings for social, intellectual and moral improvement. The place once occupied by apple peelings, corings, baskets and tables can be taken by books, papers and magazines, thus bringing the farmer and his family nearer the pulse of the great social world. The change also furnishes a ready sale for fruit with no loss and little trouble. The best of the fruit can be reserved for sale in its natural condition, while the medium and poorer qualities are available to the new process. Again he is saved a great amount of labor for all storing, sorting, and harvesting is condensed into the simple process of gathering the fruit into wagons and drawing it to the factory. And the prices paid for the fruit direct from the orchards is largely in advance of the price obtained for that dried in the old method. Prices for the current year range from twenty-five to

sixty-five cents per bushel. Thus giving to the farmer, with little time and trouble attending, from three to five times the former amount for his fruit. And he can supply his family with their usual quantity and of a vastly superior quality for the money received from the sale of his crop and retain a liberal margin for profit. Another fact in favor of the new process is the keeping qualities. Being simply apples dried, they will remain the same for any length of time if water is withheld. Thus is added to our stock a supply of no small commercial value. While the old method of exposure to the sun often allowed partial decay, thus greatly reducing its keeping quality and its value. But the greatest distinction between the two methods remains to be presented. The fruit by the new process is prepared in a few hours, against several days in the old, and is exposed to neither sun, wind, insects nor dirt. The products are perfectly free from dust and all other impurities. The process is carried on in absolute cleanliness. The water only is removed, and that so rapidly that all the natural elements of the fruit are left undisturbed. No changing of sugar to acids, no transformation to a woody substance, no approach to decay and no mingling of impurities.—simply dried apples; and so natural that the restoration of water restores the fruit to a state so perfect that the Baldwin, Greening, Northern Spy, or any other variety can readily be distinguished by its flavor. The process is a long step in the direction of improvement, and must, on becoming general, revolutionize the fruit growing interest of the State, and place a largely increased revenue in the hands of the farmers. From our present point of observation we look upon the fruit growing interest of our State as in a healthy and prosperous condition.

But the capabilities of our State are comprehended by a few only, and the mission of that few appears to be to enlighten and stimulate the many. May their work be steadily and faithfully pursued until the broad acres of our noble State shall gleam with its pendant golden fruits and every farmer be enriched by his abundant harvest.

Accompanying Mr. Perry's paper, was a letter transmitting a "Weekly Apple Report" from Liverpool, dated January 6, 1883, concerning which Mr. P. said: "By this you will see that the Boston apples, which includes Maine and New Hampshire, sell much lower than any other. I think it would be well for the Society to inquire into the reason for this, and also as to the kinds best adapted

to that market. The reason I give for their not bringing so good price as others is this, unsuitable packages and dishonest packing; in other words, the packers put choice apples in the top of the barrel and poor ones in the middle, or as we call it they are 'badly deaconed'."

The following paragraphs from this apple report will explain Mr. Perry's criticisms:

"Our market this week has been dull and inactive, and the buyers have shown no spirit even when the choicest samples have been shown; at the same time arrivals having been light and mostly out of condition, best selections of colored fruit have not declined in value, but apples out of condition and tender or small and common have done very badly, the trade not seeming to care for them even at low prices.

The demand has been entirely for Red Fruit, and Russets are selling comparatively low, best samples not making over 21s. per barrel.

Arrivals for the week are as follows: From New York, 2,846 barrels; from Boston, 1,584 barrels; from Montreal, 1,643 barrels.

Total for week, 6,073 barrels. Receipts to date, 210,483 barrels.

The following are the quotations: Baldwins, (Boston) 20 to 24s.; Baldwins, (New York) 23 to 25s.; Baldwins, (Canadian) 23 to 25s.; Greenings, 19 to 23s.; Canada Reds, 20 to 24s.; Newtown Pippins, 20 to 35s.; Golden Russets, 18 to 21s.; Rox, 18 to 19s.; Pomeroy's, 20 to 26s.; Seeks, 23 to 25s.

Slack Packed, 14 to 18s.; Slightly wet, 12 to 15s.; Wet, 8 to 11s."

The PRESIDENT. I lately received from my correspondent in Boston the price current from Liverpool, London and Hamburg. He says it is a fact that Canada apples are two or three shillings higher than our apples of the same quality, naming some particular apples. He says it is a prejudice of the English people; they will favor the Canadian fruit in spite of everything. A great many apples are shipped from Halifax and sold for Canada apples and bring Canada prices. What helps the prejudice against our apples is the false packing spoken of. This gentleman told me that nothing so injures the sale of apples. It is only by sending out a good quality of apples, well and honestly packed, that we shall in a short time overcome that obstacle and our apples will be quoted higher or as high as any other. We all know that the apples grown in Maine will keep better than those of New York.

The SECRETARY. I understand Mr. Perry's criticism to apply only to that portion of our product which is shipped from Boston; and that forms but a small part of the whole amount shipped from that port, and quoted in Liverpool and elsewhere as "Boston apples." On the other hand it has been repeatedly stated at our former meetings that many of our apples are packed and shipped

via Portland as "Canada apples," thus bringing the highest price instead of the lowest. Whichever of these statements is correct, or if both are so to some extent, the facts ought to be ascertained and made known. If we are building up the reputation of Canada apples at our own expense, and in another quarter getting the reputation of "deaconing" our apples, both practices are reprehensible. I do not believe that our apples as a whole are packed less honestly than those of other States.

ATHERTON. I saw a large quantity of apples brought into Hallowell, a year ago last fall, for a buyer from Boston. They were in flour-barrels, and were completely covered with flour. Flour-barrels should never be used for packing apples without being first thoroughly cleaned. It is utterly impossible to sweep them clean, so but the flour will show upon the apples; they should be washed with water and dried, then there is no trouble.

BOARDMAN. With regard to the price of apples in the Liverpool market. I was at the house of Mr. Carr, in Winthrop, last year, and saw there a gentleman from Montreal who was engaged in shipping apples from Portland. They were put up at Mr. Carr's house, in Winthrop, where he had apples stored and were packed and marked as Canada apples; and the reason given by Mr. Carr, was that the home people had a preference for their own apples, and Canada apples brought a higher price in Liverpool than those from the States. A large proportion of the Carr apples are sold, *known* to be Maine apples. I believe as a rule that it is the design of fruit growers to pack well so far as they understand, and as required by the shippers.

PORE. If parties come in and purchase our apples, how can we prevent them from putting the Canada brand upon them. It is very little use to put them up to keep up a reputation in England putting the larger ones in the ends and small ones in the centre. Their method there is to burst out the head and pour the apples out so that they are all in sight. Whether the apples are put up in poor or good shape it is known immediately, and known where they come from. It is a new business putting up apples for a foreign market, and it is not generally understood how they should be packed.

The PRESIDENT. I believe it is necessary to keep our apples branded from Maine and wait patiently, and in time we shall get a reputation as well as Canada.

A man from Boston once came to look at my apples. They had not been headed up. He said he should like to see a barrel ; so the apples were all taken out, one after another. It happened accidentally that as he went down deeper the apples were larger. He was satisfied and from that day to this he has made no question. He showed me how to pack apples, putting the stems down at the bottom of the barrel, and pressing in the head, and turn them over and mark the other end so that is the one opened. There were some apples that were precisely equal to mine, had been carefully packed, and sorted honestly and fairly,— that he went to look at and wouldn't truck them even at half a dollar less, because they were not packed tight, and would bruise in shipping to Boston. When a person gets a reputation established for packing, there is no further trouble, but when parties are not known there is the strictest examination.

JORDAN. The way fruit has been shipped to England, putting the poor apples in the middle and good ones on top has been a great injury to the business ; they soon found that out. They knock a head out and pour the apples upon the platform. The minute they see that, it has a great effect. Maine people are doing better every day.

GILBERT. There are some suggestive facts in connection with this subject, but in time they will be swept away. I know a case where Canadian purchasers came into this county to purchase car loads of apples to ship to England. A Maine man who assisted them in purchasing and packing, sent by the same steamer a car load of his apples. Those purchased by the Canadians were branded as Canadian. Those sent by the Maine dealer were branded as from the State of Maine. They each went into the same market at the same time and were sold at the same time. Those branded as Canadian, sold for three shillings a barrel more than the Maine apples. Dealers are looking for the *dollars*. When a Maine man ships to England he brands his apples Canada because he gets more dollars for his apples. While this is a fact, what are we going to do about it? All we have to do, I think, is to do our part of the business justly and honestly, in a straight-forward manner, and bide our time. If we are putting better apples into foreign markets from the State of Maine than from any other section of the country, they are to be recognized ; by and by we shall get credit for what we are doing but meanwhile we have got to pass through this experience and these difficulties pending the establishment of trade. This whole business

of shipping apples is comparatively in its infancy ; it has not been put into the best working shape, it is going to be handled better by and by. It is a new industry in Maine.

Finally it is said that it is practically impossible to pack apples, oranges or raisins so that the best won't come on top. That may be so, yet I believe that the man who packs his fruit honestly and brands it with his own name, is going to fare the best in the end, although the dishonest packer may get some advantage temporarily.

I hope the subject of the body of Mr. Perry's paper, THE EVAPORATION OF FRUIT, may not drop out of sight without some further notice. It is a business, I believe, of considerable importance to the State and to the individual fruit grower. I hoped that before this meeting finally adjourned the whole subject would be carefully examined to see what there is in it, and what are the best methods to get out of it what there is in it.

THE PRESIDENT. I wish to know, as a matter of profit to the farmers, what sort of apples are necessary to be used for evaporating purposes ; whether they must be first quality of apples or refuse. It is spoken of as a saving of those apples we used to feed to stock or allow to rot. My impression is that the evaporated apple is so nearly like the original that you can distinguish the kind of apple in the evaporated product. In this case it seems impossible that ordinary apples will do for evaporating and bring the same price as better ones. They bring from fifteen to eighteen cents a pound when common dried apples are worth five or six cents.

MR. BRETT, of Winthrop. (?) On that point, I made the best work from sour apples.

QUES. Can you use wormy apples?

ANS. You can use wormy apples, but it costs a great deal more. The sound part is as good. I use common fruit mostly ; nearly all kinds of fruit.

QUES. Natural fruit will not bring as much as grafted fruit?

ANS. Mine did ; and they looked better than grafted apples. I use a great many apples, down to two inches in diameter.

QUES. Cannot you use an apple as small as half an inch?

ANS. A two-inch apple is a very small one.

QUES. What is the cost of machinery for evaporating apples?

ANS. There are a great many kinds. They cost from \$75 to \$1,000 ; I am acquainted with only one kind.

QUES. A neighborhood could buy the machinery together, and one machine evaporate for the whole?

ANS. I don't know why they could not, like any other machine.

GEO. E. BRACKETT, Belfast. I believe there is an evaporator established in Waldo county, where a good many thousand bushels of apples are purchased and put through the process of evaporation. The price paid is about fifty cents per bushel. The larger portion of those apples were natural fruit. They were in as good demand as grafts, when large and fair. So far as I know, the market price did not change with respect to the quality of the apple. They used natural fruit or any other that would come in at the same price.

MERRILL. I went into an evaporating establishment to learn the price of evaporated apple. They told me that the price depended upon the fruit. The cheapest was the natural. Baldwin, Northern Spy, Roxbury Russet brought the highest price; although manufacturers might make as much margin on native as on Northern Spies, which brought the highest price. One man I talked with, in New York, told me that he made as much money from the Northern Spy that he paid four shillings a bushel for, as he did from natives that he got for twenty cents. There must be more waste in using small apples. In New York State there is a great difference in the price of evaporated apple. It is a staple article of foreign trade. I was speaking with a New York commission merchant; he told me that the people who were manufacturing evaporated apple here were getting large quantities of good natural fruit suitable to evaporate. They can get a certain price for it and it may be better for them to buy that surplus and use it up. I noticed that the manufacturers commenced on natural, and early grafted fruit until it is gone; sometimes evaporating into the winter, sometimes to the first of February, buying out of cellars. One large orchardist in Limerick stored them in his cellar for shipping purposes and evaporators came and paid him four shillings a bushel for the apples, Northern Spy and some other kinds. He said he availed himself of that opportunity as those apples turned for more than the others.

DR. W. B. LAPHAM, Augusta. I purchased of the American Manufacturing Company last summer a small drier, to dry ten bushels of apples a day, but I found its capacity was less than that. I had it as an experiment. It was set up at my brother's in Litchfield. We dried through the apple season; used native apples and the inferior quality of grafted fruit. We used No. 1 apples. We con-

tracted beforehand for the sale of the product at thirteen cents a pound, at Augusta: it is now worth eighteen cents in that market at wholesale. It worked well, and my brother was very well satisfied with what he had done with it, and intends to get a larger one next year and carry on that business on a more extensive scale. A good many of the orchardists in Litchfield have become interested in the subject and will go into the business next year. We get five pounds of evaporated apple from a bushel.

GILBERT. In the town of Greene an evaporator has been operated two seasons. Last fall a double machine was used, evaporating more than one hundred bushels of apples a day. It is not expected that when good apples sell for three dollars a barrel, evaporators will pay this price and take them. We have apples of second quality among grafted fruit that we could not get as much money out of if put upon the market; they will sell for about enough to pay for handling and that is all. That class of fruit can be put into evaporators and made profitable both to the seller and the purchaser. Of course they must be put in at a lower price because not worth as much. The price for this quality of fruit has been from twenty-five to thirty-five cents per bushel at the evaporators. In York county, where evaporators were first put in operation in this State, they had one or two very bountiful crops of fruit and prices run extremely low. A good many of the fruit growers in that section who raised nice fruit shook it from the trees without any care whatever and sold it for prices which satisfied them, to the evaporators, who took the whole quantity as it was shaken from the trees. The cost of picking was slight and the growers were satisfied. But those were years of exceptionally low prices.

The manufacturers do not pay as much for native fruit because it does not sell for as high prices; the operation is a profitable one, as otherwise the fruit is worthless. There is room for a great deal of this work to be done and I have no doubt it will extend all over the fruit growing section of the State. Our cheaper fruits will be put into cash in that way. Our early fruits are so plentiful that the market is glutted,—they have become almost unsaleable. I hope those early fruits will be utilized by drying so they can be preserved and carried to a profitable market. No. 1 grafted fruit probably would average six pounds of fruit to the bushel; those of inferior size and with worm holes which make considerable waste. I believe average about five pounds to the bushel; depending somewhat upon

size, as the same size for core is taken out of apples of every size. The machine cuts a core of equal size whether the apple is large or small. The difference in the size of the apple makes a difference in the number of pounds of the product. The product is sold at eighteen cents a pound; six pounds of evaporated fruit from a bushel would give one dollar for the evaporated fruit from a bushel of apples. The cost of the operation is not heavy; so that that is a very fair price to get even for perfect fruit,—a price fully equal to what we get in our most fruitful years.

JORDAN. I have a relative in Fayette who has made money from his large orchard. He has dried a good many apples; sliced them and used a kiln to dry them in; though within two years he has commenced evaporating. He says you don't want to evaporate bitter-sweet apples. The more sour an apple is, the nicer it is for this purpose. It uses up that sort of apples. He has dried from one to two tons a year. I think there is an advantage to be gained by orchardists in using up everything. Every man who has a good orchard can have an evaporator of his own; he need not let it go into the hands of others; he can own one of these machines that cost \$60 or \$70, and keep it himself. That is where the advantage comes from. He need not form companies while he can get all the profit himself.

S. W. SHAW, Minot. There is one point which has not been discussed. If evaporated fruit from natural growth, does not sell for so much as that from grafted fruit there is a reason for it. That reason is this: Evaporating fruit does not change its nature. If we would not go into our piles of apples gathered for cider and promiscuously select our fruit for the market, neither should we select in that miscellaneous way for evaporating, provided we design to get a good product. That is business. A clear sour seedling apple is good to evaporate; is worth as much as a grafted one, and would bring as much; but a large proportion of our natural fruit is not well flavored, and evaporating it will not make it so, consequently it makes a poorer product. Yet it is desirable to work up poor apples, because they will sell and that class of fruit will find a market. One more point. The price has been quoted at eighteen cents a pound. That is so. Last year our friend from Winthrop sold his fruit at Lewiston for ten cents a pound, and was glad to do so. He said he paid out twenty-five cents a bushel, so you can make your own calculation with regard to the profits. Six pounds to the bushel at

ten cents per pound is sixty cents; twenty-five from sixty leaves thirty-five cents per bushel for No. 2 Baldwins.

STROUT. There is another aspect presents itself to me. In front of my house is a cider mill, where a class of people gather to guzzle cider, and I want to get rid of that sort of a nuisance. Moral and social as well as financial questions are involved in this matter. I have determined in my own mind that I will have something to use up the apples. I want to buy those apples that are being ground up, there, and dry that mill up.

Adjourned.

Afternoon Session.

Met at 2 o'clock P. M. The committee on award of premiums presented their report, as follows:

REPORT OF AWARDING COMMITTEE.

The committee appointed to award the premiums offered at this meeting, submit the following report:

There were on the committees' book, 131 entries of single dishes of apples, by 16 exhibitors, as follows:

R. H. Gardiner, Gardiner.....	9 varieties.
L. Lennan, Gardiner.	2 "
George H. Pope, West Gardiner.....	1 "
S. W. Shaw, Minot.....	5 "
Miss L. L. Taylor, Belgrade	10 "
William B. Ferguson, Dixmont.....	1 "
J. S. Hoxie, North Fairfield.....	15 "
F. E. Nowell, Fairfield.....	16 "
W. P. Atherton, Hallowell.....	1 "
D. P. True, Leeds Centre.....	9 "
A. E. Andrews, Gardiner.....	7 "
Perley & Perkins, Vassalboro'.....	21 "
W. R. Wharff, Gardiner.....	9 "
Charles S. Pope, Manchester.....	2 "

S. R. Sweetser, Cumberland Centre	22 varieties.
J. C. Blaisdell, Waterville	1 “

Besides these there were some specimens brought in at a late hour and not entered on the books, making in all about 170 dishes of apples.

There were no entries of pears, grapes or flowers.

Premiums are awarded as follows :

For the best exhibition of fruit :

S. R. Sweetser, 1st premium	\$3 00
William R. Wharff, 2d premium.....	1 00

For the best dish of winter apples :

R. H. Gardiner, (Yellow Bellflower,) 1st premium..	2 00
S. R. Sweetser, (Baldwins,) 2d premium..	1 00

For the best dish of Baldwins :

S. R. Sweetser, 1st premium	1 00
R. H. Gardiner, 2d premium	50

For the best dish of Rhode Island Greenings :

S. R. Sweetser, 1st premium	1 00
W. R. Wharff, 2d premium.....	50

For the best dish of Northern Spy :

A. E. Andrews, 1st premium...	1 00
S. W. Shaw, 2d premium	50

For the best dish of Peck's Pleasant :

James S. Hoxie, 1st premium.....	1 00
L. Lennan, 2d premium.	50

For the best dish of Mother :

Charles S. Pope, 1st premium	1 00
Miss L. L. Taylor, 2d premium.....	50

For the best dish of Jewett's Fine Red :

S. R. Sweetser, 1st premium ...	1 00
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For the best dish of Hubbardston Nonesuch :

A. E. Andrews, 1st premium	1 00
Miss L. L. Taylor, 2d premium.....	50

For the best dish of Red Canada :

Frank E. Nowell, 1st premium...	1 00
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For the best dish of Black Oxford :

D. P. True, 1st premium	\$1 00
Frank E. Nowell	50
William R. Wharff, gratuity	25

For the best dish of King of Tompkins County :

S. R. Sweetser, 1st premium	1 00
Miss L. L. Taylor, 2d premium	50

For the best dish of Danvers Winter Sweet :

S. W. Shaw, 1st premium	1 00
Miss L. L. Taylor, 2d premium	50

For the best dish of Talman's Sweet :

D. P. True, 1st premium	1 00
S. R. Sweetser, 2d premium	50

For the best dish of Yellow Bellflower :

R. H. Gardiner, 1st premium	1 00
William R. Wharff, 2d premium	50

For the best dish of Roxbury Russets :

S. R. Sweetser, 1st premium	1 00
A. E. Andrews, 2d premium	50

For the best dish of American Golden Russets :

William R. Wharff, 1st premium	1 00
J. C. Blaisdell, 2d premium	50

For the best dish of English Golden Russets :

A. E. Andrews, 1st premium	1 00
Perley & Perkins, 2d premium	50

For the best dish of Gravenstein : (no premium offered.)

S. R. Sweetser, gratuity	50
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For the best dish of Winthrop Greenings : (no premium offered.)

W. R. Wharff, gratuity	50
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Amount of premiums and gratuities awarded, \$31.25.

The committee were somewhat in doubt whether any of the specimens exhibited as American Golden Russets were true to name. They recommend that the English Golden Russet be stricken from the Society's lists.

Respectfully submitted.

A. E. ANDREWS,	} Committee.
WM. H. PIERSON,	
C. A. DOW,	

Then listened to an essay on

WHAT WE LEARN BY FAILURE.

BY S. W. SHAW, OF MINOT.

What is truth? What is error? These questions have in all ages engaged the attention of the wisest, and the wisest have sometimes made mistakes. As affecting the various avocations of life, their correct solution is as vital as the air. The line which separates the false from the true is sometimes so faintly marked, so obscured by plausible speculations that the honest inquirer after truth embraces error instead and in its pursuit plunges into failure.

The most beautiful theory, if at variance with the teaching of experience, like the will-o'-the-wisp of the valley, leads its votary into the pitfalls of disappointment. It is safe to follow only when theory and practice unite in leading the way. The theorizer of to-day says that the farmer should live mainly on the products of his own farm, and refers to the practice of the fathers in its support. It is true they so lived and were prosperous. In our time many have attempted the same thing and failed. Whence their failure?

It is said our remote ancestors lived in caves, and subsisted on roots and nuts dug from the ground with their fingers, and as far as we know, were satisfied. Who would now be willing to revive the practices and the civilization of the olden time? Neither do we believe it best or practicable to follow the former practices except under similar conditions which, in most cases, do not exist, as must be apparent to the most careless observer. Steam, the railroad, manufactures and mechanical ingenuity have completely revolutionized the whole fabric of industrial and social life. It is not wise to resist the inevitable. The opportunities for agricultural progress and development by the introduction of a more varied and profitable production were never, it is believed, better than to-day.

New industries are taking the place of the old, and in some cases the old, in response to an increased demand, have come to the front with a prominence not possible before. Of the latter class is fruit growing. This, we have no doubt, is to become one of the most remunerative, as it is one of the most agreeable occupations of the farm, in a large part of the State. In the prosecution of this industry in the past, failures indeed, not often absolute, but comparatively such, it is to be regretted, have too often occurred, and

been a source of much discouragement. I now proceed to the consideration of a few points bearing on the

TREATMENT OF ORCHARDS.

In the vegetable, as in the animal kingdom, age never resumes the appearance and the functions of youth; and he who disregards this natural law in his treatment of either his orchard or himself, will inevitably meet with failure and disappointment. Orchards may become prematurely old in consequence of neglect, overbearing, starvation, and other causes. Unproductiveness and decay follow; and their owners, as well as others, in many cases, unsuspecting of the cause, are led to regard orcharding a failure. But the observing mind looks upon such failures as incentives to a more intelligent and careful practice and the result will rarely disappoint the expectation. The first appearance of unthrift in a tree should receive prompt attention, the cause sought for, and a remedy applied if possible. Sometimes it is difficult to determine in advance the result of any prescribed attempt at renovation. Usually, it is believed, well directed efforts bestowed upon a tree not evidently too old, will prove reasonably remunerative and sometimes wonderfully so. In this, as in other matters pertaining to every day life, theory needs to be supplemented by experience, to be modified and corrected by failure as well as by success.

No apology is deemed necessary for the introduction, in this connection, of certain facts bearing on this subject, occurring either in my own experience, or under my immediate observation. I have in my mind an orchard planted about twenty-five years ago with State of Maine grown nursery trees—variety, Baldwins. Receiving proper care, it grew finely, came early into bearing, and has usually borne splendid crops of fruit till last year. For the last eight or ten years it has been treated with neglect. Numerous dead and decaying branches, sure indications of decay, disfigure the trees standing on high land; while those on low ground, benefited undoubtedly by fertilizing material washed from above, are, as yet, thrifty in their appearance, and a few trees receiving an accumulation of road-side washing still make a splendid annual growth of wood as well as fruit. The teaching of this illustration is, we think, too obvious to be misunderstood or misapplied.

Another illustration occurs to me foreshadowing the probable result in the case just mentioned. This orchard was grafted in the

limbs when young, and within my own memory. For fifteen or twenty years it was well cared for and produced bountiful crops. Passing into the hands of another proprietor, pasturage only, was substituted for the generous treatment of the former owner, first with sheep, then with swine. For some time the harvests continued to be as satisfactory as before, but after a few years the production decreased, and the former vigorous and thrifty appearance of the orchard existed only in the memory of the beholder. The owner then attributed the change to overbearing; he now adds starvation. Under this state of things, the owner plowed, manured and mulched the whole surface of the ground, bringing it up to a high state of fertility and keeping it in that condition. He also cut out large quantities of dead wood, removing in many cases more than half the top. Result: The foilage at once assumed a fresh and lively appearance, and the fruit production now seems to indicate that the attempt at renovation was a profitable and judicious expenditure; but the annual product of dead wood indicates certain and speedy death. The epitaph must be, died of premature decay induced by starvation.

I come now, somewhat reluctantly, I confess, to the consideration of some points in my own experience, which at much cost have led me to believe some things false I once supposed true. About thirty years ago I came into possession of an orchard planted early in the settlement of the town. It was grafted in the limbs when young, and, under the judicious treatment of its careful owner, grew into a beautiful maturity. Subsequently it fell into negligent hands, receiving no care whatever. Besides, it was annually robbed of its scanty production of grass as well as fruit. This process had continued for more than twenty years when I became owner. It was then in fact as well as in appearance an old orchard.

Much was said at that time in support of the theory, that by the proper use of the saw and the plow, and other specified treatment, old trees might be rejuvenated and become as good as new — almost. At the same time it was claimed that it was not advisable to plant young trees as they would not grow as well as formerly.

So with strong resolution and much courage, I set about the process of revivification. I pruned and cultivated, and dug and manured so far as practicable with the resources of a worn out farm. A few trees were grafted with new and choice varieties. Others were grafted in the sprouts growing from the trunk, while sprouts

growing from the root with apparent vigor, were also grafted. All this, and more was done in accordance with the most approved prescriptions of the pomological doctors of the time, with the expectation of gathering for many years rich harvests of beautiful fruit.

Almost immediately, results seemed to indicate that the experiment had been at last a partial success. The foliage changed its deathly hue for one of living green, and for a few years the harvests gave encouragement to the hope. But as in human life, the most sanguine hopes and anticipations of declining years often come to an unexpected and abrupt conclusion, so these old trees after having given so good promise of continued usefulness, went rapidly down. Of that ten acre orchard, once one of the most noted in Cumberland county as then existing, not more than half a dozen trees of any value whatever, still remain. Three only of those grafted in the sprouts ever amounted to anything; and no scion set in a sprout growing from the root ever came to maturity. The failure in this case evidently consisted in undertaking for permanent improvement what resulted only in temporary advantage, for so far as actual profit and loss were concerned, the balance was undoubtedly on the right side of the ledger.

These illustrations are introduced in this connection as beacon lights of danger, warning against the practices resulting in so much mischief and loss. These are no isolated cases; similar experiences are constantly occurring wherever decaying orchards are found.

The unsatisfactory results of former practices have induced fruit growers to resort to new methods and processes of production. Instead of relying wholly on the old trees, new orchards have been extensively started, but with varying success. Thousands of trees have been planted but failed to grow. Thousands of others have made but a feeble and sickly growth, while the flourishing condition of many young orchards demonstrates the feasibility, if not the certainty, of growing as good trees as were ever raised by the fathers.

It is generally believed that orchards will not grow and flourish now as formerly. If this belief, so potent in retarding progress in this direction, be a falacy, as I believe it to be, it is of the greatest importance that its falacy be made apparent to all. I do not now propose to discuss this question except incidentally.

We cannot, if we would, ignore the force of such questions as these: Why are there so many failures in this business? Why do

not our trees grow as well as did those of the fathers? Why is there not as much certainty in this as in other farm pursuits? In reply, I unhesitatingly express the opinion that, the conditions of success being observed, there may be as much certainty in the prosecution of this as any other farm industry. I also believe that, as "distance lends enchantment to the view," the success of the early settlers has been very much magnified and their practices lost sight of in the fog, while the mistaken views thus obtained have contributed largely to many a failure which might have been made a success.

The old orchard again affords an illustration. My ancestral relative used in planting well grown, symmetrical trees. Not having enough of that quality to complete the work, he used inferior trees on about two acres. After finishing the job, he remarked, "he supposed he should have been better off if he had purchased better trees at a cost of one dollar apiece." The result verified the wisdom of the remark if not his practice. I well remember the whole orchard as it appeared in my childhood. The first planting grew into large, beautiful trees, loaded with an abundance of excellent fruit. I often wondered at the marked contrast between that and the other portion, where the trees, with some favorable exceptions, were much dwarfed in size and unsightly in appearance, nor was the fruit production nearly so satisfactory. Within a hundred rods from that orchard I remember another which never grew to a large size, and its fruit production was always small. Cause—poor soil, poor care, starvation, and perhaps poor trees when planted.

From these illustrations and other cases known to me, I deduce the following propositions: First, when the fathers failed to observe the conditions of success in orchard culture, they, like their descendants, met with failure. Second, that essential conditions of success are good soil, good trees, and good care.

I can hardly refrain from considering here the question, what constitutes a good tree. Evidently something is required besides a large number of even fibrous roots, or well formed trunk and branches, or both combined. Within the last twenty years, I have had considerable experience in the resetting and subsequent treatment of trees. Have used all sorts of trees, practiced different methods of after treatment, and obtained results ranging from absolute failure to complete success. I have used trees growing spontaneously by the roadside and other waste places, also nursery trees grown by

differing methods and in various localities. I have learned to reject an unthrifty tree from whatever cause, as worthless.

I early adhered to the theories, that root grafting is an unnatural process, producing inferior trees; that grafting in the limbs produces a more hardy tree than can be obtained by grafting in the trunk or crown of a root grown from the seed; and further, that an ungrafted tree is of stronger growth, more productive, and longer lived, than one grown by any method of grafting whatever. Regarding them as theories still, I would speak of them cautiously. In the light of my experience, I will only say that I would reject root grafted trees altogether. Whether an ungrafted tree be more hardy and productive than others, or not, there certainly can be no profit in growing poor fruit; hence I would use the best grafted trees obtainable, and I will here express the opinion, possibly a theory not well founded, that it is of very little consequence at what period of growth the operation of grafting is performed, provided it be done before the maturity of a tree grown from the seed.

Regretting the necessity of leaving so many points involved in this subject, unnoticed, I will here close by deducing the following conclusions:

That an old orchard cannot be permanently rejuvenated.

That in consequence of overbearing and neglect, trees may become prematurely old, and the injury thus sustained can never be fully repaired, or the penalty for thus violating natural law be evaded.

That young orchards can now be grown with more profit, and with as much certainty, as by the fathers.

That in planting orchards, good, thrifty and hardy trees only should be used, to be followed by generous and careful treatment, or failure will result.

That the quality and fitness of a tree for transplanting, depends not so much on the longitude in which it is grown, as upon the method of its production.

DISCUSSION.

After reading his paper, questions were put to Mr. Shaw by several members, which he answered, as follows:

QUES. Do you mean to say you would object to grafting a natural tree that was of considerable size, provided the tree was perfectly thrifty?

ANS. I would graft any tree before maturity. I have often been asked whether it would be advisable to graft a tree that was fully grown, bearing good crops and not making new wood. I think there is just the line of separation between a tree *profitable* to graft and one *not* profitable. If a tree makes no new wood, I would not graft it. It is a safe line of demarkation between the two.

QUES. What was the age of your orchard at the time it came under your care?

ANS. I don't know exactly. The man who planted it took up that piece of land about 1785 or 1786. The orchard was probably planted in 1790. I came into possession in 1850. It was then, as I suppose, sixty years old; a little too old. The point I make in these matters is: that if an orchard has been neglected in its prime, or reduced by over-production, it is like a man who over-works himself all through his life, he is not likely to live as long as he otherwise would. He will look older at seventy than he would if not over-worked. I think you cannot violate natural laws without suffering the penalty. If a tree has become prematurely old, it never can go back. Another point: After you begin to renovate a tree, as my friend is now doing with his old orchard, that practice must be continued in order to reap any benefit. When that practice ceases, my observation is that the orchard will cease to *be*.

QUES. I understood you to say that you lost that orchard, or it went down suddenly, under your care, after a certain amount of high cultivation which you gave it?

ANS. I mean to say that the neglect of twenty-five years wrought as much mischief as fifty years of age would if it had been cared for properly.

STROUT. I understand that Mr. Shaw's theory is, that there is in both animal and vegetable life a certain amount of vital force. That is to say, a man lives, under ordinary circumstances, to eighty or ninety years. A tree will live to eighty or ninety. That period may be reached sooner by neglect or by over-work. There are so many years of life for a tree, to start under the most favorable circumstances; beyond that you cannot expect to go. So you shorten that period by neglect. Any attempt at revivification must be a failure by virtue of that law.

QUES. How long will an orchard live under such care as it ought to have?

SHAW. That is a fair question, but any answer I can give to it would be mere theory. I have not seen an orchard cared for in that way long enough. I am not disposed to say much about theories; they have cost me a good many hundred dollars.

QUES. I have heard it said that you cannot raise a young orchard where an old one has grown; that all the material that went to make a good apple tree would be exhausted after they had decayed and gone down. I don't suppose it would be proper to put out a new orchard where an old one grew?

ANS. I advocate the idea that it needs common sense in the treatment of orchards, as much as it does in raising corn. If you can raise one crop of corn after another has been taken from the ground, you can raise a crop of apple trees. In order to reach the success of our fathers, we must have as good and fertile soil. We can raise as good crops as they did. It may cost more to keep the ground in condition; it may cost us something to replace what they have taken from the soil. That is our misfortune; but that can be done. The difficulty does not exist in the nature of the case, but in our misapprehension of their success. The real difficulty is in the conditions. If any condition has been interfered with, it must be supplied.

ATHERTON. I wish to speak of my own experience in the renovation of an old orchard. I think the trees must have been sixty years old, and were mostly grafted. They had been neglected. After it came into our possession we plowed it, manured it highly and pruned the trees. Of course the effect was seen at once. The leaves put out with greater vigor and better color, and the fruit was larger and better. The consequence was, that this treatment stimulated the trees, and although they produced fruit heavily, they began to go back, and to die faster. The limbs broke down. There was an unnatural stimulation. Since that I have mulched the old trees by spreading manure under them. By mulching them and not disturbing the roots the effect, so far as I have learned, will be much better than plowing, and thus breaking the roots. The old trees cannot stand as much they could once. I know of another orchard standing on the side of a hill which, when it was young, the proprietor used to plow year after year and sow with oats. He used to have great crops by that practice; keeping it under cultivation. The trees were old and healthy and strong. They raised oats and put on dressing; but after a while he seeded it down.

Afterwards the orchard came into the hands of another man, who plowed it up and pruned it heavily. That orchard went down quickly.

There is another point in Mr. Shaw's paper, with regard to grafting from the roots. I have a number of good healthy trees that are of quite good size and have borne fruit, that came from sprouts; I think Mr. Smith, of Monmouth, has a number of such trees. I have been watching those trees to see how they would get along; how much they would bear as compared with other trees. I find they are doing well so far, and see no difference in any way whatever.

SHAW. I did not advance any theory respecting the growing of trees from sprouts; I only stated my experience. I have no doubt that trees can be grown from sprouts.

BENNOCH. With respect to the matter of grafting, alluded to by Mr. Shaw: the younger a tree is grafted the better it is for it. I want a tree three years old to graft if I can have it so; then I want to put the top on. Then they heal over readily. Grafting in the limbs is a good way, but you have to contend with suckers.

Mr. BENNOCH, by request, explained the method of grafting practiced by himself, which he calls "lap-grafting." He exhibited specimens of scions set in this manner in different stages of growth, and illustrated his remarks by reference to them and by performing the operation of grafting, consequently no report could be made. This method is illustrated in the report for 1881, as a "modified form of saddle grafting," and as explained by Mr. Bennoch at the meeting at Gardiner.

IN MEMORIAM.

JOSEPH TAYLOR.

The death of JOSEPH TAYLOR, which occurred about the first of July, 1882, at Westport, Mass., where he was visiting at the time, was announced, and appropriate remarks were made by the President and several members.

The following sketch of Mr. Taylor's life and character, contributed mainly by Mr. George E. Minot of Belgrade, was read by the Secretary :

Joseph Taylor was born in the town of Belgrade, in the year 1804. He was brought up on his father's farm and attended the town school. After having acquired a good practical education he devoted himself to teaching in the winter and farming in the summer. As an instructor of youth he was very successful, always winning the respect and love of his pupils. He served in the capacity of Selectman and Treasurer of his town ; and during nearly all of the time from 1835 to 1870, he was a member of the Superintending School Committee, which position he filled with much credit to himself and to the entire satisfaction of his townsmen. In his frequent visits to the schools he was always welcomed by both teachers and pupils. He always manifested great interest in the youth of his town, especially in their moral and religious training, ever speaking to them words of encouragement and cheering them on in their preparation for the conflicts of life.

In 1846, Mr. Taylor was elected as Representative to the Legislature and was again re-elected in 1852, in which position he served upon important committees and was a useful and careful legislator. He was a leading and influential member of the Society of Friends, and was often employed in missionary labor for the upholding and propagation of the faith of which he was an earnest defender. In the local and quarterly meetings of the society he was always an interesting speaker. At the time of his decease he had recently attended the yearly meeting of his denomination, at Providence, R. I., whither he had gone about three weeks previously, in his usual

health. At the close of the meeting he went to visit one of his sons at Westport, Mass., where he was taken sick and died as above stated.

Mr. Taylor was early interested in fruit-culture, and during the last twenty years of his life was so extensively and successfully engaged in it, as to justly place him in the front rank among the best orchardists of the State. The numerous exhibits which he made at the State and county exhibitions and the uniform excellence of the specimens which he exhibited, as well as his extensive sales and the high reputation of his products in the markets, are the best evidence of his success in his favorite avocation. He became a member of this Society at its organization, and was punctual in his attendance at its meetings and exhibitions. As senior Vice President, he was frequently called upon to preside at the meetings, which he did with ease and dignity. In the discussion of pomological questions and in his written articles for the Society's reports and the agricultural papers, he expressed his ideas clearly and forcibly, but always courteously.

It was in the social and private relations of life that the true character of Mr. Taylor shone most conspicuously. The words of cheer which he ever had for every one struggling under adverse circumstances, and the smiling countenance with which he always met his friends will be long remembered. In his family relations he was remarkably happy, living to see his five sons and two daughters grow to manhood and womanhood, and all respected in their several positions in life. Universal sorrow filled the hearts of his neighbors when the news of his death spread throughout his native town, and every one united in saying that a truly good man had been taken away.

The following resolutions were adopted :

WHEREAS, Joseph Taylor of Belgrade, a life member and first Vice President of this Society, has since the last Winter Meeting, been removed from among us by death, and

WHEREAS, His constant attendance and participation at our meetings, his deep interest in the Society, his marked success as an orchardist, and his upright and amiable character and disposition have endeared him to us as his associates, therefore

RESOLVED, That it is with the deepest sorrow that we record our loss, and that we will ever cherish the memory of his virtues and of his labors among us.

RESOLVED, That as a token of our regard for his memory, these resolutions be entered at length upon the records of the Society, and published with the proceedings; and that a copy of the same be transmitted to his family.

Adjourned.

Evening Session.

Owing to the inclemency of the weather, the evening session was held at the Elmwood Hotel, where a large number of the members boarded. The exercises were of a highly interesting character, but as the reporter could not be present no report was made, and we can only present a brief outline.

Instructive remarks were made by the President, on the process of budding fruit trees. Mr. Gilbert spoke of the Apple Maggot. (*Trypeta pomonella*.) and read extracts from a paper by Professor Comstock in the Report of the Department of Agriculture for 1882. A paper on the same subject was also contributed by Mr. S. C. Harlow of Bangor. A paper on "Commercial Rose Growing," was presented by Mr. William E. Morton of Portland. Various local reports and letters from absent members were read by the Secretary, a portion of which will appear hereafter.

Votes of thanks were passed to the municipal officers and citizens of Waterville for the use of the town hall; to the Maine Central Railroad for free return tickets; to the proprietors of the Elmwood Hotel for reduction of rates of board and their kind attention to the comfort of the members; to Messrs. Peter De Rocher of Waterville and William H. Pierson of Vassalboro', for the thoroughness and perfection of the local arrangements for the meeting; and to the several speakers and essayists.

Various pomological subjects were discussed informally, among them a large collection of apples, presented by Mr. Merrill of West Gloucester, and, at an early hour, after a most interesting session, the meeting was

Adjourned *sine die*.

THE APPLE.—USES IN FAMILY, WAYS OF PREPARING, PRESERVING AND SERVING IT.*

BY MRS. A. L. HERSEY OF OXFORD.

I venture to say that no one present would be willing to exchange the apple for either the peach, the pear, the orange or the lemon, the pineapple or the bannana, or, indeed, for any other tropical fruit. I presume there is no fruit the New England house-keeper would miss so much, especially in the culinary department, as the apple, and certainly there is nothing that could supply its place. Judging from my own observation, the good father of the household, too, would find it, if possible, still more difficult than would his housekeeper to dispense with the apple in the bill of fare at the family table.

Only last month some of the convicts at Sing Sing rebelled because they did not have their apple-sauce twice a week. Indeed, I quite wonder it had not been Adam, instead of Eve, that yielded to the temptation of the fair apples in the Garden of Eden; and had it not been that Eve was the quicker to appreciate, by sight and by smell, the beauty and lusciousness of the fruit of the "Tree of Life," I've no doubt but that the blame of our depraved natures would have been laid at the door of man's frailty, instead of being borne by his young, impressible wife. I presume it was with Eve as with the rest of us loyal wives. If anything new and nice is to be had, it goes to our husbands; and the sins we commit, first and last, for his benefit, would ruin us all, were it not they were committed from a purely unselfish motive—our love and devotion to our "Adam."

But, to my subject—the apple, its uses in the family.

The same apple, uncooked, is a good digester, and is always a welcome lunch. The tiny child, with only a half-dozen teeth, will gnaw all around an apple, holding on to it with its little chubby hands with the tenacity of a squirrel. The school boy or school girl will eat more apples, ripe or green, than I should dare tell, and that with impunity. The young miss and lad from twelve to sixteen will fill their pockets with apples, and with book or paper and per-

* Read at a Farmers' Institute in Oxford county.

haps a kitten or a dog for company, will go away by themselves and read and eat by the hour, apparently supremely happy. The pater familias, when he comes into the sitting-room for a rest or for a passing word, always helps himself to the appetizing fruit from the dish on the table; and, in olden times, the pitcher of cider over the broad fire-place, would be the loser when he left by a good full glass of the yellow sparkling juice.

Through New England, in the country, apple-sauce is on the table three times a day as regularly as is bread and butter. The apples are pared, cored, stewed and sweetened, and if by chance the same is spiced, as if for pies, the family eats a double portion. When the cider comes home, all sweet from the mill, the cider apple-sauce or apple jack is made. The cider is boiled down in large quantities, sweet apples are placed in the bottom of the big kettles to prevent scorching, and frequently a barrel is made at one time for the winter's supply. It has a very tart, clean taste, and eaten with meat is almost as nice as cranberries.

You have all heard of the pan-dowdy or pan-pie, the pride of our grandmothers and the delight of many of their daughters. It was baked in the brick oven. A large earthen pot was heaped full of sweet apples, pared and cored, and was then half filled with equal quantities of molasses and water, covered with a very thick crust, and not disturbed till morning. Then the crust was broken into the steaming contents, which were rich and red, and the whole replaced in the oven to stay till the oven was cold. It came out one handsome jellied mass, and was eaten with cream, and was second only to strawberries and cream. The Indian pudding, which suggests baked beans and brown bread, is better far with a good generous addition of sweet apples.

What is richer than baked sweet apples eaten with cream or a bowl of creamy milk; sprinkle sugar over them before baking and put a little water in the dish. All good wives cut them up for their husbands, (this for the ladies only.) Nothing tastes so good to the invalid, just beginning to rally from a long sickness, as the baked sour apple, and nothing is safer for him to eat.

Perhaps the most palatable, as well as the simplest way of cooking the fruit for dessert, is in the form of sago pudding. Put a cup of sago in a pint of warm water to soak; cover your pudding-dish with whole sour apples, pared and cored; sprinkle a small cup of sugar over them and nearly enough hot water to cover them.

Let it remain in the oven till the apples begin to soften, then pour over them the sago and water and replace it in oven for twenty minutes or more, till it thickens and browns ; it should be eaten with cream and sugar, and is very harmless and delicate.

Birds-nest pudding is a very tempting dessert, as all know who have tried it. Pare six apples ; take out the cores without breaking ; fill the holes with sugar, after placing the apples in an earthen pudding-dish ; make a batter of one pint milk, two table spoons flour and three eggs ; pour over the apples and bake until the fruit is soft ; to be served with cream sauce, viz : half a cup of butter beaten until light, cup of powdered sugar, half a cup of cream. Set the dish in a basin of hot water and stir until it is creamy. This will take but a minute. Then there is the apple-dumpling steamed and the apple-dumpling baked—both good and hearty. Apple-snow is nice, and quite ornamental for the tea-table. Steam a cup of sour sliced apple until soft ; beat light the whites of two eggs ; add a cup of pulverized sugar, gradually beating in the steamed apple ; to be placed on boiled custard, as in floating island, and ornamented with jelly.

But the all-essential, omnipresent dish at the New England farmer's table is the apple-pie. Apple-pie in the morning, apple-pie for lunch, apple-pie for dinner, apple-pie for supper. He never tires of it. There is the Yankee apple-pie—sliced apple, sweetened with molasses, with a dash of sugar and spice and a little salt or butter ; and then there is the same, sweetened with sugar only ; and there is the stewed apple-pie, made of sauce with extra sugar and spice placed between the flaky crusts ; and how luscious are the little apple-pies, cut with biscuit cutter, made to grace the tea-table when apples first begin to ripen ; or apple turn-overs fried *a la* doughnuts. Last but not least, our never-failing winter dessert, mince-pie, is dependent upon chopped apples and cider for its rich unique composition.

Some of you know that there has been a great outcry over this so-called "relic of barbarism," "the pie." They tell us it is prolific of dyspepsia, of sleepless nights, of consequent ill-temper and fretfulness ; and if this be so, who knows but the majority of our divorce cases are ascribable to *bad pie-crust* ? for here is where the mischief lies. Pie crust made with poor lard, poor at best, which we get at our grocers ; pie crust made with olive oil, which is now sold for shortening ; pie crust made with oleomargarine ; pie crust

made with top of the pot, or with such soap grease generally; pie crust thick and heavy; pie crust soaked, soggy, half cooked; *such* pie crust is an abomination. It is unfit for any human stomach. If I had cream and butter I should use nothing else for pastry. Put soda and salt in cream before mixing, roll out two or three times, spreading over it small pieces of butter and a little flour each time; roll very thin for plate—be sure your plate is not an old one soaked with fat—and bake a good, rich brown, on both sides. Better burn than have a slack bake. Thus pie crust can be made simply, yet appetizingly, and the farmer can have his pie without dyspepsia.

I have tried a receipt for cake, where dried apples chopped and stewed in molasses, is substituted for raisins and currants, but I did not think it nice.

I have heard of fried apples and pork, and of some being very fond of the dish, but it seems to me the ingredients are incompatible.

PRESERVING APPLES.

Canned sweet apples flavored with quince are almost or quite as nice as pear. Preserved with equal parts of sugar, flavored with quince and lemon, the apples' transparent richness delights the eye and the palate. Apple jelly, or marmalade, from the common or crab apple, is equally good.

The primitive way of preserving apples by paring, coring and stringing, and hanging on long poles in the spacious kitchen, inaugurated the apple bee. To this the young people looked forward with as much glee as to the husking or to the quilting. How many of us can remember how, on such occasions, apple seeds would go shooting across the room, hitting some unsuspecting youth and bringing an involuntary scream—or remember, perhaps, of taking an apple and counting the seeds with the favored one, as we went through with the conventional:

- | | |
|------------------------------|-----------------|
| 1, I love, | 7, She loves. |
| 2, I love, | 8, Both love. |
| 3, I love, they say; | 9, He comes, |
| 4, I love with all my heart, | 10, He tarries, |
| 5, I cast away. | 11, He courts, |
| 6, He loves. | 12, He marries. |

I believe the twelve seeds were never forthcoming. Alack-aday! Those were happy days indeed. But only memory can bring them

back, for the indomitable Yankee has given us machines to pare, machines to core, machines to slice, and the evaporator to dry—and there are no more excuses for youthful flirtations.

In those days the apples were shaken from the trees and put in bins, like potatoes—were worth but a trifle in the market. But now the demand for exportation keeps the prices up, and the farmer finds his crop of apples pays him better than his corn or potatoes, and is almost as necessary for family use. The young trees mature quickly, and with plenty of ashes dressing, as I know from experience, will astonish you with their heavy burden of large, handsome fruit.

Among the cheaper varieties I have found the Minister and Mother apples the best for cooking. They are very large bearers and keep well. The Greening and Yellow Bellflower are equally good, but command a higher price as eating apples. They are all juicy, easily cooked, and of a sharp, acid flavor. I think we do not half appreciate the value of the sweet apple. The Minister, as well as the Summer Sweets, should be more valuable than sour. They are scarcer, they are very hearty, and certainly, when properly cooked, there is nothing nicer. I find that the small, unmerchantable apples pay better, fed in small quantities to the cows, colts, pigs and hens, in the winter, when they can get no green food, than in any other way. They eat them with avidity, and they sharpen the appetite by giving a little variety.

The borer here is the greatest enemy of the apple tree. It requires time and patience as well as constant watchfulness to exterminate him. It is said that sand piled around the trunk of the tree will prevent his depredations, but I should not put too much reliance upon it.

Hoping the apple of discord may not enter your Society, and that your wisdom and your records may be as apples of gold in pictures of silver, I wish you all success.

COMMERCIAL ROSE GROWING.

BY WM. E. MORTON, OF PORTLAND.

This is a subject in which those who are engaged in pomology or general farming may not be so much interested as the florist or those who have an interest in the production of fine flowers in our cold winter climate. It is a trade by itself,—one that requires constant care, years of experience, and above all a love for the business. The farmer who produces his crops under the genial skies of our New England summer, hardly realizes the difficulties under which we labor in our cold, blustering winter weather, to produce an artificial summer atmosphere in which roses will flourish, sending forth a constant succession of fragrant flowers day after day, regardless of the zero weather outside. I propose to give a few brief directions, as practiced in my own business; and shall speak of the subject under the following heads, viz: Location, House or houses, Heat, Soil, Manure, Plants, Varieties, Care, Cutting buds, Market, Profits.

1st—*Location.* This must be well sheltered and exposed to the sunlight all day, or at least the greater part of the time. In our cold climate, with short dark days, we must have a location where all the sun that there is can be obtained, otherwise failure is certain.

2d—*Houses.* These ought to be not less than 20 feet wide, 100 feet long, walls 3 feet high and not over 8 feet high in center of house; low houses can be kept warm so much better than high ones.

3d—*Heat.* Whatever method you use, flue, hot water or steam, (and it is yet a question which is the best, hot water or steam,) the houses must be kept at a temperature of not less than sixty degrees, no matter what the weather may be outside.

4th—*Soil.* This must be a stiff clay loam, well enriched with manure and leaf mould.

5th—*Manure.* This must be well rotted cow manure. Our practice is to give the beds a coating of some three inches early in September and again in December. This has proved with us none too much.

6th—*Plants*. Always plant out small bushes in preference to large ones ; good healthy plants, from three inch pots, are the best.

7th—*Varieties*. Bon Silene, Saffron and Isabella Sprunt, are the best for a continuous supply. Nephotos for white, with Marshal Niel. Souv. Malmaison, Paul Nieron, Pearl of the Garden, and a few others, for fancy varieties.

8th—*Care*. This must be constant, pruning, syringing, fumigating, weeding and ventilating, with the many things a careful cultivator will find to do.

9th—*Cutting of Buds*. This should be done as soon as the outside leaves commence to start. In other words, cut close buds. They will open all a uniform size in a vase of water in about ten hours, if in a warm room and are kept sprinkled.

10th—*Market*. It is of course better to have a retail trade. If not, find some dealer who will take all you grow two or three times a week. Otherwise, you will have to consign to some commission house in the large cities ; they will sell at twenty per cent. commission, you to pay all express charges and stand all loss of unsold goods.

11th—*Profits*. I am hardly prepared to say what these will be. It will depend so much upon the weather, demand, supply, &c.

REMARKS. The foregoing applies to rose-growing under glass in winter. The production of fine roses out of doors for the summer trade requires different treatment, of which I may have something to say at some future time.

THE APPLE MAGGOT.

(Trypeta Pomonella Walsh.)

Order DIPTERA ; family TRYPETIDÆ.

“Eating into the pulp of apples and causing them to decay; a white cylindrical maggot, which when full-grown goes into the ground to transform. The adult is a black and white fly, with banded wings.”

[Extracts from paper by Prof. J. Henry Comstock, of Cornell University, N. Y., in Report of Department of Agriculture for 1882.]

“There is another enemy of the apple which, in certain localities, rivals the Codlin-moth in the extent of the injury it does. I refer to the insect known as the Apple Maggot, and which is becoming quite common in certain parts of New York and New England.”

* * * * *

“The Apple Maggot is a small white footless larva, measuring from .19 to .27 inch in length. In some instances the body is yellowish-white; in others it has a greenish tinge. ♦The important peculiarity in the habits of this insect is that it bores tunnels in all directions through the pulp of the fruit; frequently these tunnels enlarge into cavities the size of a pea; and when several larvæ are present in the same apple it is honeycombed so as to be rendered useless.

It will be seen at once that the injury done by this pest is even more serious than that done by the Codlin-moth. For as the injury caused by the latter insect is confined to the neighborhood of the core and to a single, nearly straight, and conspicuous tunnel which the larva makes when leaving the apple, it often happens that the injured parts of an apple may be cut away and the remainder eaten. But the nature of the injury caused by the Apple Maggot is such that when fruit becomes infested by this insect no one cares to attempt to use it.

The Apple Maggot is a native American insect, which naturally feeds on the different species of hawthorn (*Cratægus*) and upon crab-apples. It is probable that this insect occurs throughout the country wherever hawthorns or crab-apples are found. Mr. Walsh observed it long ago as far west as Illinois, and I have bred the adult insect from a species of *Cratægus* growing on the Agricultural Grounds at Washington.

In certain parts of New York and New England the species has acquired the habit of feeding upon the cultivated apple. But, what is very remarkable, it does not appear to have done so in other parts of the country. Thus, although Mr. Walsh bred this insect from haws in Illinois twenty years ago, I can find no record of its infesting apples in that State yet. And in Washington it infests haws growing near an orchard in which it has not been observed.

In those localities in which this insect has spread to the cultivated apples and become common it is even a more serious pest than the Codlin-moth, except that it seems to be more fastidious in its choice of food than that insect. Thus, although I have observed it for several seasons in one of the orchards of Cornell University, I have found it only in a few varieties of fruit. This may account for the slowness of the spreading of the species from haws and crab-apples to the cultivated apple, and may afford a means of reducing to a minimum the injuries of this pest.

In certain parts of New Hampshire the Apple Maggot is known as the 'Railroad Worm.' The extent of the ravages of this insect in certain parts of that State is indicated by the following extract from a letter which I have received from Mr. N. W. Hardy, of the town of Nelson :

In regard to the Railroad Worm, I never saw one in this town. In the last six years they have worked in the adjoining towns of Hancock and Dublin. They are confined to early apples as soon as they ripen.

I saw a man the other day that said that this insect had ruined his apples so that he would have to graft them into winter apples.

Many of the early varieties of apples in Hancock and Dublin were rendered entirely worthless. We have more to fear from this insect than any other that preys upon the apple.

Mr. Isaac Hicks, of Long Island, who was one of the first to observe this insect in apples, many years ago, does not consider it so serious a pest as does the correspondent just quoted. The following extract from a letter recently received from him is interesting as bearing on this point, and as suggesting remedial measures :

Thine of 17th received; and, in reply, will give thee what little I know of the Apple Maggot, *Trypeta pomonella*. Its ravages bear no comparison to the injury done by the Codlin-moth to fruit. Last year being the non-bearing season, we saw very few apples, if any, infested with it. It is different from the Codlin-moth, which can place its egg in the very young fruit, go through its transformations, and lay its eggs in winter apples. We seldom see the *Trypeta* until about the 1st of September, and never in green fruit. Only in the ripest apples and in sweet or mellow subacid fruit are they found by us. I think they cannot exist to much extent if pigs or sheep run

in the orchard, as they prefer the ripe apples, in which alone the Apple Maggots can develop and attain their growth. Hence, where the fruit that falls is picked up frequently and sent to mill to be ground, or where pigs and stock or the family consume it freely, very few of the Maggots arrive to perfection.

It is evident, from my observations and from those of my correspondents, that the Apple Maggot is much more apt to infest early apples than the winter varieties. But the latter are not exempt from its attacks. Mr. Henry Thacker, of the Oneida Community, New York, writes me as follows :

This worm at this place, and at this time, is mostly confined to certain varieties of autumn apples. But at Wallingford, Conn., the winter apples were ravaged as well. Of late years, however, the Baldwin and some other varieties of winter apples growing here have been found bored by this maggot."

* * "In the autumn when the larvæ are full-grown they leave the apple and enter the ground and transform to pupæ. In my breeding-cages the pupæ were found about one-half inch below the surface of the ground. When the change to pupa occurs the body shortens, but the larval skin is not molted, the transformation occurring within the dried skin of the larva. The pupa, therefore, resembles the larva very much, except that it is shorter, of an oval outline, and of a pale yellowish-brown color. Length about 1.5 inch.

The insect remains in the pupa state during the entire winter and early summer. Specimens which I bred in Washington began to emerge as adults May 28, and continued to emerge till July 6. But as these were kept in a warm room during the entire winter, their development was doubtless accelerated."

* * "The length of the body of the adult male is 1.5 inch ; of the female, 1.4 inch. This fly can be easily recognized by the peculiar shape of the black bands on the wings, by the milk-white spot on the caudal part of the thorax (scutellum), and by the white bands on the abdomen." * * * * *

"*Remedies.*—The more practicable ways of lessening the injuries caused by this pest are those suggested in the letters quoted above—the destruction of infested fruit promptly after its fall from the tree, and before the maggots leave it to go into the ground to transform ; and when the pest is very abundant, the grafting of the trees into varieties less liable to be infested. In such a case it might be well to leave one or two trees of early apples to serve as traps, and

promptly destroy the fruit as it falls from them. If such trees could be inclosed, and sheep or pigs pastured under them, the success of the trap would be assured.

The Apple Maggot can be readily distinguished from the larva of the Codlin-moth by the absence of feet and the fact that it infests the pulp rather than the vicinity of the core. But there are other maggots which are associated with this species, and with the larva of the Codlin-moth also, which are not readily distinguished from the true Apple Maggot. These other species pertain to the genus *Drosophila*, and feed upon decaying fruit. They cannot be considered, therefore, under ordinary circumstances, as noxious insects in an orchard. Two species of this genus are described in following articles, under the name of *Pomace Flies*."

To the foregoing Mr. HARLOW adds: This insect seems to be increasing to such an extent in our own State within a few years as to cause serious alarm among growers of fruit. In my own experience, thus far, its ravages have been mostly confined to early ripening autumn apples, particularly mellow, sweet ones, such as the Golden and Hightop Sweet; but I have also found them in the Danvers Winter Sweet as well as some acid varieties, as the Gravenstein, Jenneting and Porter. Fortunate would it be were their depredations confined to early mellow apples, as some have supposed; but although preferring them, I find my own experience to the contrary confirmed by other cultivators of fruit. * *

There are several points of interest concerning this insect on which more light is needed, for successful warfare. The first is the identification of the egg and determining the exact time and manner of its deposit on the apple. A second one is, does the larva, like that of the Codlin-moth, pass from one fruit to another on the tree? Third; can the parent fly be caught in any way, by bottles or otherwise, more successfully than its ally, the Codlin-moth? Fourth; can it be driven from the tree or killed at the time of depositing its eggs, by spraying with any liquid which will neither taint or poison the apple, considering it does not infest the apple till nearly ripe? Fifth and lastly; is there any parasite which by being protected and cultivated can assist us in its extermination?

While trying to inform ourselves on these and similar points, let us lose no time in availing ourselves of the knowledge already gained.

Extracts from Letters Received.

[From N. T. TRUE, M. D., of Bethel.]

Perhaps I can do no better service to the cause of orchard culture than by giving my own experience since I described my method of setting out an orchard at a previous meeting of the Society. [Report 1876, p. 71.] Actual results are usually far preferable to theories.

My two young orchards were composed of seedling stocks transplanted with great care six years ago. I did not engraft them till they had become well rooted and growing thriftily, because I then believed, as I now do, that I should lose a smaller number of stocks than if I had done it when they were transplanted. Out of my two orchards, I have lost but two stocks—one, by transplanting to its roots a dead calf, and the other, from having a dead heart in its infancy.

The stocks are all engrafted in one orchard, but in different years, as they seemed best fitted for the purpose. I have always left some small shoots below the stock so that in case of failure I might save the stock. Many of the tops are becoming quite *treeish*. I have kept my trees all well mulched chiefly with maple leaves. These have been of great value. I have allowed the land to be seeded down to grass one year, but re-plowed last spring, removed the mulching and earth, and supplied a dressing of well decomposed compost of muck and barn manure. They have grown finely the past year. My other orchard has had less care, but is doing well. A few stocks engrafted with King of Tompkins County, were killed last winter.

I have endeavored to anticipate the future of the tree by shaping it as soon as I could with a good spreading top. I have applied whitewash made of lime and lye from leached ashes.

These are all the points I find worthy of note with reference to what I have done.

But as attention is not usually given to reporting our omissions and mistakes, I will simply add, that if I were to prepare my hard

rocky land for another orchard, I would run my dead furrows on the line where I would set the trees, dig down still deeper so as to make an underdrain, and then throw in all the small stone I could gather from the land, making a blind drain, fill it up with earth and plant the trees over the drain. If properly managed, the labor would not be great, while good drainage, and a healthier tree would be grown, drought would not affect them, the roots would extend much farther, and a larger tree with a more rapid growth would be secured, and, lastly, an abundance of fruit.

With reference to the borer, I have failed in every experiment except that of a sharp knife and wire. Trees should be examined every month during the season, and the borers dislodged as early as possible after the eggs have been deposited.

[From D. J. BRIGGS, South Turner.]

The fruit crop in this vicinity is not as large as in some former years. The high winds in early fall blew off one-quarter, and in some unsheltered localities, one-half of the entire crop, which were not matured, and of course sold at a reduced price. Those that did not blow off made a good growth and were colored very nicely but somewhat wormy. Apples are selling for a good price at the present time. Pears were scarce and sold well in the fall.

In this locality the scions that were set in 1881 made a very good growth; but from some cause, in the spring of 1882, more than one-half of them did not start. Some say they were winter killed, but my judgment is that in making so large a growth in September the same year they were set, and then being exposed to the severe cold of October 5th of the same year, (so cold that it froze apples on the trees,) I think the scions were frozen so as to stop the circulation of the sap.

Fruit production in a large portion of Maine is bringing a large income to the producers, and it would be well to have more legislative action on so very important a branch of farming; say give the Society that represents this industry \$1,000 a year, so as to encourage our farmers to enter into it with more zeal.

Would it not be well for the Society to hold more meetings, in different parts of the State, perhaps one in June and another in August, when the pomologist is in his glory? I think the Society

would increase its membership by so doing ; there ought to be ten members where there is one now.

[From B. F. MATHEWS, Hope.]

In the vicinity where I reside, the first settlers, being near the sea shore, did not engage in orcharding, but more especially in lumbering,—every farmer setting about one hundred trees, allowing them to grow the same as forest trees. If there happened to be a sweet apple the tree was clubbed and stoned until it ceased to bear fruit.

Nearly fifty years ago, Jacob White of Hope, brought from Massachusetts a small bundle of scions of the Baldwin, which were set in the orchards of Boyce Crane, Esq., Abner Dunton and Daniel Bartlett, of Hope. From that time the farmers began to improve their orchards, and now they have some very fine ones. It has been hard to dispose of our fruit for full prices on account of having no sale for it in large lots. But that time is past, and we can now sell at our homes all we can raise. Mr. L. S. True of Hope, is shipping all he can find in the vicinity, to Liverpool. He packs in barrels made to order, lined with paper. Mr. J. Gould is handling about three thousand bushels. Dr. Isaac Bartlett & Son are using three thousand bushels in their cider mill. So you perceive we have a market for all we can raise. The Baldwin is a good bearer in our valleys about our mountains. For winter fruit the Baldwin leads, and with the King, Northern Spy, Roxbury and Golden Russets, are all I would cultivate. For late fall and winter the Hubbardston, Fletcher Sweet and Gravenstein are about all that are profitable. It does not pay to raise early fruit for twenty-five cents per bushel.

If I were to begin life again, I would purchase twenty-five acres of land, set it to winter fruit, setting the trees forty feet apart each way, so as to give ample room to cart dressing without interfering with the trees, keeping the trees well mulched, allowing no grass or sprouts to grow about the trunks, keeping the tops open ; would not scrape the trunks, but apply the dressing and let that do its work. Never saw or cut a limb until the buds start in the spring, or later than August ; if you do the bark will not heal over the cleft. Cut when the tree is growing and it will heal over very rapidly. Fruit should be carefully handled, never allowed to lay on

the ground after being put in barrels. Market when the fruit is in its best condition.

[From H. A. SPRAGUE, Charlotte, Washington County.]

I would state that as yet a majority of the farmers of this county do not realize the importance of fruit culture, or rather apple culture, for this appears to be the only fruit, (except perhaps some of the small fruit), which has as yet been proved to be profitable here. Our farmers are, however, gradually seeing the profits of the apple crop, and more attention is being given to this branch of agriculture each year. As yet Washington county does not produce apples enough for home consumption, but I think the time is not far distant when she will have a surplus for export.

I have but little to add to what I said two years ago in regard to varieties tested in this vicinity. Of the King Sweeting, I think I ought to have said half-hardy, instead of hardy.

My Talman's Sweets have borne every year since commencing, but bear heaviest in even years.

Ben Davis continues to sell well after Baldwins are out of the market, and many people think they are good, when they have no better ones to compare them with.

Wealthy, I think, will be for this latitude what the Baldwin is further south.

Magog Redstreak, I think, will prove hardy, vigorous and productive, but is not as good for eating or keeping as the *Wealthy*.

Scott's Winter has a good flavor in spring, and I think will, when well known, be more popular than *Ben Davis*.

Alexander has not fruited with me yet, but is said to be profitable by those who have it in bearing.

The greatest draw-back to fruit culture in this county is insects; and the greatest cause of the multiplication of insects, is the destruction of birds and toads; and the greatest destruction of birds and toads is caused by summer tourists. They kill the birds for sport, or for taxidermic purposes, and both toads and frogs for pickerel bait.

[From D. B. WOODBURY, Paris.]

The benefit that may be derived from this meeting cannot be over-estimated.

It is very necessary that we start aright in all things. Perhaps more so in Pomology than many others, as many years may pass before we discover an error involving much labor and delay to rectify.

That our labor may be both profitable and pleasant we must avail ourselves of each other's experience, and in no way can this be better done than by meetings like this.

The probable increase of our population should encourage us to do our very best to furnish them with an abundance of *the very best* fruit. It is a necessary article of food, as well as a luxury. It pays well to see it growing, and will pay well in the future at selling time. As the population has doubled every twenty-five years we should prepare to double our fruit product to meet the increasing demand. It might pay us to quit exporting our Main-born people, and have their help to double the fruit crop for exportation instead.

Our climate and location, though far at one corner, afford us advantages in growing and exporting fruit that should not be forgotten. Our long, cool autumn is just what our apples want to finish their growth, and prevent their ripening too early. With our rapid transportation we can send them around the world three months before they perish with us. If our Baldwins ripened by August we should have to catch and eat as they fell from the trees, but as they are slow growers they only finish their growth here before cold weather, and keep till spring. * * * * *

Perfection will never be attained, but let not this discourage us from coming as near it as possible.

Every farm or garden spot should contain a good supply of apple, pear, plum and cherry trees. Nor should we forget to provide the grape, raspberry, currant and gooseberry; and a strawberry bed sufficient for the needs of its visitors, which will include the birds. As we want their help and company we may as well grow enough of all fruits to give them their share of the best.

In our flowers we are more favored, for the birds have not yet learned their worth or their own needs, though they take their baths in my Pond Lily tubs of a morning. And as every living thing was created for some good purpose, let us give the flowers their place and read a cheering lesson from their bright faces.

The field in which we labor is a vast one, and we need never think to say "the work is done." But others will begin where we leave off, and our failures may aid them to success. Some one of them that loves to originate new varieties through hybridization may even produce "a successor to the Baldwin" and our best pear and grape.

I regret that I cannot be present, and await your report with much interest.

[From J. W. LANG, Brooks.]

Report from Waldo County.

In this vicinity the past year it has been a fairly prosperous season. The first of the season was wet and cool up to July 10th or thereabouts. After that dry with but little rain-fall. Apple trees blossomed with great fullness and a large crop set. On the approach of drouth, many fell off, and of the matured crop nearly all were undersized. The crop, as a whole, was an average one. Better varieties are more and more set, and grafted into older orchards year after year, and we can see a steady, though perhaps slow growth in orcharding and fruit culture in Waldo county. The first requisite in stimulation of any branch of business is faith in that business. We are getting a better faith in fruit growing, in our soils, in our location, and better knowledge and better appreciation is taking root in a healthy form. No variety of apple has stronger hold or is growing in popularity more with us than that old standard, the Baldwin. Home raised trees are set in larger proportion than formerly. Sales of trees from abroad are growing beautifully less. No more crabs, please!

One evaporator, consuming thousands of bushels of best natural and second quality grafted apples, has been established, and has operated two seasons, in Montville, turning out a superior product and doing a paying business. There are many good locations for other evaporators and creameries in our county, and we hope this pioneer establishment may very soon be many times duplicated. Cider apples, of which large quantities are suffered to grow, do not pay for picking and manufacture. Slowly these old cider orchards are dying out, or are being regrafted where practicable, and all the younger trees are being pressed into bearing.

Waldo county has many good orchardists scattered over its extent, notable among whom are F. W. Ritchie of Winterport, A.

B. Strattard of Monroe, B. Plummer of West Winterport, B. Webber and H. Webber of Monroe, Freeman Partridge of Prospect, and Charles Bellows of Freedom, and these are but samples. It is beginning to be understood that we have lots of excellent orchard sections, and every farm has at least, with hardly an exception, one or more good orchard sites.

In pears, we are just starting in here and there, and this fruit can, as yet, scarcely be reckoned as raised in our county, but it has a future with us nevertheless. With grapes the attention has been longer directed, and a vine or two is now found near almost every home. Our people are just learning how easily they can be grown, and what a blessing they are. Strawberries are cultivated in a little wider extent each year, and we have entered upon the cultivation of this fruit in earnest. With raspberries, blackberries, currants and gooseberries, the same may be said, and though for a long time past they have had a place here and there in gardens, as yet no systematic culture has obtained. Plums and cherries are grown to some extent, but that terrible scourge "black knot" dampens the ardor and crushes the hope at present.

On the whole the outlook is hopeful. There is movement in the right directions. There is progress and improvement.

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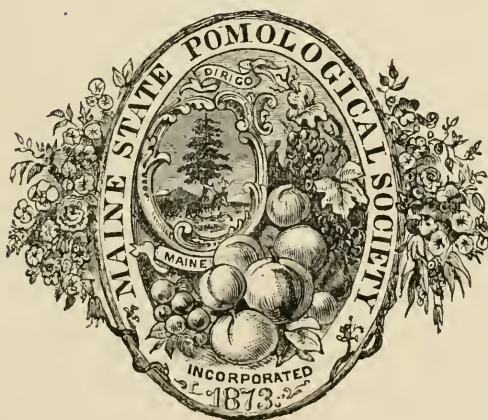
OF THE

Maine State Pomological Society,

FOR THE YEAR

1883

Including the Proceedings of the Winter Meeting held at Brunswick,
January 22 and 23, 1884.



AUGUSTA :
KENNEBEC JOURNAL PRINT.
1884.

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Maine State Pomological Society.

OFFICERS FOR THE YEAR 1883.

President—Robert H. Gardiner, Gardiner.

Vice Presidents—Stillman W. Shaw, Minot,
S. C. Harlow, Bangor.

Secretary and Treasurer—George B. Sawyer, Wiscasset.

Executive Committee—The President and Secretary, *ex-officiis*;
Samuel Rolfe, Portland; Charles S. Pope, Manchester; Henry
McLaughlin, Bangor.

Corresponding Secretary—Granville Fernald, Harrison.

Trustees—Androscoggin county, D. J. Briggs, South Turner.

Aroostook	“	Henry Tilley, Castle Hill.
Cumberland	“	S. F. Strout, Falmouth.
Franklin	“	S. R. Leland, Farmington.
Hancock	“	Charles G. Atkins, Bucksport.
Kennebec	“	W. P. Atherton, Hallowell.
Knox	“	Elmas Hoffses, Warren.
Lincoln	“	H. J. A. Simmons, Waldoboro’.
Oxford	“	N. T. True, Bethel.
Penobscot	“	J. E. Bennoch, Orono.
Piscataquis	“	H. A. Robinson, Foxcroft.
Sagadahoc	“	H. S. Cary, Topsham.
Somerset	“	James S. Hoxie, North Fairfield.
Waldo	“	D. L. Pitcher, Belfast.
Washington	“	H. A. Sprague, Charlotte.
York	“	John Hanscom, Saco.

Maine State Pomological Society.

OFFICERS FOR THE YEAR 1884.

President—Charles S. Pope, Manchester.

Vice Presidents—S. C. Harlow, Bangor,
S. R. Sweetser, Cumberland.

Secretary and Treasurer—Geo. B. Sawyer, Wiscasset.

Executive Committee—The President and Secretary, *ex-officiis* ;
Andrew S. Sawyer, Cape Elizabeth ; Leander H. Blossom, Turner ;
Frank E. Nowell, Fairfield.

Trustees—Androscoggin county, N. W. Harris, Auburn.

Aroostook	“	E. E. Parkhurst, Maysville Centre.
Cumberland	“	Francis C. Jordan, Brunswick.
Franklin	“	G. K. Staples, Temple.
Hancock	“	Charles G. Atkins, Bucksport.
Kennebec	“	Richard C. Plaisted, Gardiner.
Knox	“	Elmas Hoffses, Warren.
Lincoln	“	H. J. A. Simmons, Waldoboro'.
Oxford	“	Jairus K. Hammond, Paris.
Penobscot	“	J. E. Bennoch, Orono.
Piscataquis	“	H. A. Robinson, Foxcroft.
Sagadahoc	“	Henry S. Cary, Topsham,
Somerset	“	James S. Hoxie, North Fairfield.
Waldo	“	D. B. Jackson, Freedom.
Washington	“	Nelson S. Allen, Dennysville.
York	“	Randall Boothby, Limerick.

COMMITTEES FOR THE YEAR 1884.

ON NEW FRUITS.

W. P. ATHERTON, Hallowell.

S. L. BOARDMAN, Augusta.

ON INTERNATIONAL EXHIBITION AT NEW ORLEANS.

S. L. BOARDMAN, Augusta.

RUFUS PRINCE, Turner.

CHARLES S. POPE, Manchester.

MEMBERS OF THE SOCIETY.

Note.—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full christian names where initials only are given.

LIFE MEMBERS.

Andrews, A. Emery.....	Gardiner	Low, Elijah.....	Bangor
*Atherton, H. N.....	Hallowell	Low, S. S.....	Bangor
Atherton, W. P.	Hallowell	McLaughlin, Henry.....	Bangor
Atkins, Charles G.....	Bucksport	*Metcalf, M. J.....	Monmouth
Atwood, Fred	Winterport	Moore, William G.....	Monmouth
Bennoch, John E.....	Orono	Moor, F. A.....	Waterville
Burr, John.....	Freeport	Morton, J. A.....	Bethel
Carter, Otis L.....	Etna	Morton, Will. E.....	Allen's Corner
Chase, Henry M.....	North Yarmouth	*Noyes, Albert	Bangor
Chase, Martin V. B.....	Augusta	Perley, Chas. I...Seward's (Vassalboro')	
*Clark, Eliphalet.....	Portland	Pope, Charles S	Manchester
Crafts, Moses.....	Auburn	Pulsifer, D. W.....	Poland
*Crosby, William C	Bangor	†Richards, F. G.....	Gardiner
Dana, Woodbury S.....	Portland	Richards, John T.....	Gardiner
DeRocher, Peter.....	Waterville	*Richardson, J. M	Greene
Dirwanger, Joseph A.	Portland	Roak, George M.....	Auburn
Dunham, W. W.....	North Paris	Robinson, H. A.....	Foxcroft
Dyer, Milton	Cape Elizabeth	Rolfe, Samuel.....	Portland
*Emerson, Albert.....	Bangor	Sawyer, Andrew S.....	Cape Elizabeth
Farnsworth, B. B.....	Portland	Sawyer, George B.....	Wiscasset
Frost, Oscar F.....	Monmouth	Shaw, Stillman W.....	Minot
Gardiner, Robert H.....	Gardiner	Simmons, H. J. A	Waldoboro'
Gilbert, Z. A.	North Greene	Smith, Alfred.....	Monmouth
†Godfrey, John E.....	Bangor	Smith, Henry S.....	Monmouth
Hanseom, John.....	Saco	Starrett, L. F.....	Warren
Harlow, S. C.....	Bangor	*Stetson, Isaiah.....	Bangor
*Harris, N. C.....	Auburn	Stilphen, Asbury C.....	Gardiner
Harris, N. W.....	Auburn	Stanley, Charles	Winthrop
Hersey, T. C	Portland	Strout, S. F.....	West Falmouth
Hopkins, Miss S. M.....	Gardiner	Strattard, Mrs. A. B	Monroe
Hoxie, James S.....	North Fairfield	Sweetser, S. R.....	Cumberland Centre
Ingalls, Henry.....	Wiscasset	*Taylor, Joseph.....	Belgrade
*Jewett, George.	Portland	Thomas, William W. Jr	Portland
Johnson, Isaac A.....	Auburn	Tilton, William S.....	Chelsea
Jordan, Francis C.....	Brunswick	True, Davis P	Leeds Centre

* Deceased.

†Deceased 1884.

LIFE MEMBERS—*Concluded.*

Varney, James A.....	Oregon	* Weston, James C	Bangor
Vickery, James.....	Portland	Wharff, Charles S.....	Gardiner
Vickery, John.....	Auburn	Whitney, Edward K.....	Harrison
Wade, Patriok.....	Portland	Woodman, George W.....	Portland

* Deceased.

ANNUAL MEMBERS — 1883.

Baker, Miss Millie.....	Lewiston	Lennan, L	Gardiner
Blossom, G. W.....	Turner	Litchfield, L. K.....	Winthrop
Blossom, L. H.....	Turner Centre	Mason, John B	Mechanic Falls
Briggs, D. J	South Turner	Merrill, T. M.....	West Gloucester
Carey, Henry S.....	Topsham	Mitchell, Israel.....	Lewiston
Carpenter, James M.....	Pittston	Nelson, E. N	Minot
Chipman, A. B.....	West Gloucester	Nowell, Frank E.....	Fairfield
Dill, Seward.....	Phillips	Osgood, A. J.....	Cumberland Centre
Emerson, Ivory W	Lewiston	Perkins, L. J	Deering
Goss, Charles F.....	Lewiston	Pittee, Tristram D....	Cumberland Centre
Ham, Nelson.....	Lewiston	Plaisted, Richard C.....	Gardiner
Hoffses, Elmas.....	Warren	Staples, G. K.....	Temple
Jordan, Miss Alice M.....	Auburn	Towle, J. J.....	Dixfield
Kenniston, E. H.....	Simpson's Corner	Whitecomb, C. C	Simpson's Corner
Lapham, E. A	Pittston	Whitmore, Thomas P.....	Bowdoinham
Lapham, Wm. B.....	Augusta	Young, W. H.....	Auburn

To the Secretary of the Maine Board of Agriculture :

I submit herewith a report of the transactions of the Maine State Pomological Society for the year 1883, containing an account of the annual exhibition ; the more important papers presented at the winter meeting, with an abstract of the discussions on the same and other subjects ; and such other matters as are, in my judgment, required or authorized by law.

I take this opportunity to repeat what has been said with respect to the previous reports, viz : that “ the Society assumes no responsibility for the correctness of any theory advanced, or of any statement of fact or opinion made in the papers and discussions reported ; but only undertakes to report the same faithfully ; omitting in the discussions, as far as practicable, all repetitious, irrelevant and unimportant matters.”

GEO. B. SAWYER, *Secretary.*

Maine State Pomological Society.

TRANSACTIONS FOR 1883.

The eleventh annual exhibition of the Maine State Pomological Society was held at Lewiston, in the new building on the grounds of the State Agricultural Society, on the 18th, 19th, 20th and 21st days of September, 1883. It occupied two wings on the third floor of the main building, which were well filled. The premium list was substantially the same as that of the preceding year. The amount offered in premiums was \$916.75; and the amount awarded, \$557.15. All the classes were well represented in the entries, the apples, as usual, taking the lead; and there were a larger number of collections, both of fruit and flowers, than in former years. Several of the counties were represented for the first time, and by very creditable exhibits. In the classes of grapes and flowers, the exhibition was among the largest ever made by the Society. Pears were well represented, and plums better than an average. All the fruit indicated increased care in the selection of varieties, and skill in the art of exhibiting; and the proportion of inferior specimens and of unknown and incorrectly-named varieties was noticeably small.

Provision was made for holding the annual meeting of the Society on September 20th, at the City Building, in Lewiston; but on account of the temporary illness of President Gardiner, which prevented his attendance, and for other reasons deemed sufficient, the meeting was adjourned to the time and place of the winter meeting—and was accordingly held at Lemont Hall, in Brunswick, January 22 and 23, 1884. The details of the annual exhibition and the proceedings of the several meetings appear in subsequent pages.

SCHEDULE OF PREMIUMS OFFERED, ENTRIES MADE AND PREMIUMS AWARDED AT THE ANNUAL EXHIBITION.

[NOTE—The names of persons to whom premiums were awarded are given first under each specification, with the amount awarded, in ordinary type; and afterwards, in smaller type, the names of other competitors for the same. When the name of a person is repeated his place of residence is omitted.]

Class 1—APPLES.

FIRST DIVISION.

Special Regulations. “Entries for all premiums in this division must consist of five specimens of each variety exhibited and (except Nos. 18 and 19) of at least twenty correctly named varieties. Entries for premiums Nos. 18 and 19 must be separate and distinct collections, not embracing any other collection or specimens, and in awarding the premiums regard will be had both to the quality of the specimens and the value of the varieties exhibited.

By ‘named varieties’ is meant such as are named and described in some standard work on Pomology, or have been named and approved by some National or State Horticultural Society.

In adopting 20 as the number of varieties required in these collections (1 to 17), the Society does not intend to encourage the multiplication of varieties: and the committee will be instructed, in awarding the premiums, to have regard to *quality* and *value* rather than to the number of varieties, and will be authorized to recommend gratuities for meritorious collections embracing less than the number of varieties required as above.”

Premium No 1. For the best general exhibition of apples, grown by the exhibitor in any part of the State. Miss L. L. Taylor, Lakeside (Belgrade), first premium, \$15; James S. Hoxie, North Fairfield, second premium, \$10; Perley & Perkins, Seward’s (Vasalboro), third premium, \$5.

Under the practice adopted by the Society, of allowing all collections entered for premium No. 1 to be also entered for the county premiums, all the collections were so entered, and the names of the competitors will appear under their respective counties.

2. For the best general exhibition of apples, grown by the exhibitor, in Androscoggin county. N. W. Harris, Auburn, \$10; G. W. Blossom, Turner, \$8; D. J. Briggs, South Turner, \$5.

Rufus Prince, Turner; Charles Richardson, Greene; A. B. Chipman, Poland; D. P. True, Leeds Centre.

3. For the same in Aroostook county. No entry.

4. For the same in Cumberland county. S. R. Sweetser, Cumberland Centre, \$10; Milton Dyer, Cape Elizabeth, \$8.

T. D. Pittee, Cumberland Centre.

5. For the same in Franklin county. G. K. Staples, Temple, \$10.

6. For the same in Hancock county. No entry.

7. For the same in Kennebec county. W. R. Wharff, Gardiner, \$10; E. A. Lapham, Pittston, \$8.

8. For the same in Knox county. Elmas Hoffses, Warren, \$10.

9. For the same in Lincoln county. H. J. A. Simmons, Waldoboro', \$10; George B. Sawyer, Wiscasset, \$8.

10. For the same in Oxford county. J. J. Towle, Dixfield, \$10.

11. For the same in Penobscot county. J. E. Bennoch, Orono, \$10; E. H. Kenniston, Dixmont, \$8.

12. For the same in Piscataquis county. No entry.

13. For the same in Sagadahoc county. H. S. Carey, Topsham, \$10.

14. For the same in Somerset county. Frank E. Nowell, Fairfield, \$10.

15. For the same in Waldo county. Mrs. A. B. Strattard, Monroe, \$10.

16. For the same in Washington county. No entry.

17. For the same in York county. No entry.

18. For the best five named varieties of Autumn apples. Miss L. L. Taylor, \$3; E. A. Lapham, \$2; F. E. Nowell, \$1.

Simmons, True; C. C. Whitcomb, Dixmont; Harris, Briggs; R. H. Gardiner, Gardiner; Dyer, Sweetser, Hoffses.

19. For the best five named varieties of Winter apples. R. H. Gardiner, \$3; C. C. Whitcomb, \$2; E. A. Lapham, \$1.

Miss Taylor, Simmons, True; Ivory W. Emerson, Lewiston; Harris, Briggs, Dyer.

20. For the best collection of apples for home use, for the entire year, in the smallest number of varieties. S. R. Sweetser, \$5.
(*Red Astrachan, Gravenstein, Northern Spy, Rhode Island Green-*

ing, Baldwin, Roxbury Russet, Talman's Sweet) ; H. J. A. Simmons, \$3. (*Early Harvest, Gravenstein, Honey Sweet, Northern Spy, Baldwin, King of England* (?)).

Miss Taylor—King Sweeting, Gravenstein, Baldwin, Somerset; D. P. True—Large Yellow Bough, Winthrop Greening, Swaar, Talman's Sweet, Roxbury Russet; D. J. Briggs, (list not found).

21. For the best collection of Crab Apples, not less than five varieties. J. S. Hoxie, \$2.

SECOND DIVISION.

"Entries for premiums in this division must consist of from five to ten specimens, according to size, of each variety exhibited, and must be separate specimens from any exhibited in the first division."

22. For best single variety of Autumn apples. S.W. Shaw, Minot, (*Gravenstein*), \$2; A. B. Chipman, \$1.

Miss Taylor, Nowell; L. K. Litchfield, Winthrop; Charles A. Day, East Turner; Simmons, Briggs, True.

23. For the best single variety of Winter apples. R. H. Gardiner, \$2; H. J. A. Simmons, \$1.

Miss Taylor, True, Chipman, Shaw, Day, Briggs.

24. For the best dish of Alexander. W. R. Wharff, \$1; Miss L. L. Taylor, 50c.

Melzer Gilbert, Turner; John Dunton, Lewiston; Day, Bennoch.

25. American Golden Russet. (*Syn. Sheepnose*). Not awarded.

26. Baldwins. S. R. Sweetser, \$1; Miss L. L. Taylor, 50c.

Simmons, Gardiner, Perley & Perkins, Dunton, Shaw, Sawyer, Emerson, True, Kenniston, Litchfield, Whitecomb, Day, Staples, Lapham, G. W. Blossom; L. H. Blossom, Turner Centre; B. F. Teague, Auburn; David Farrar, Lewiston.

27. Benoni. L. K. Litchfield, \$1; J. E. Bennoch, 50c.

Gardiner.

28. Black Oxford. W. R. Wharff, \$1; Perley & Perkins, 50c. True, Hoxie, Staples.

29. Blue Pearmain. T. D. Pittee, \$1; R. H. Gardiner, 50c.

Kenniston, Bennoch, Mrs. Strattard.

30. Briggs' Auburn. G. W. Blossom, \$1.

31. Cole's Quince. T. D. Pittee, \$1.

32. Danvers' Winter Sweet. John Dunton. \$1; W. R. Wharff, 50c.

Perley & Perkins, Shaw, True, Sawyer.

33. Dean. A. J. Osgood, Cumberland Centre, \$1; Miss L. L. Taylor, 50c.

Nelson Ham, Lewiston; Towle, Staples.

34. Duchess of Oldenburgh. S. R. Sweetser, \$1; W. H. Young, Auburn, 50c.

Dunton, Bennoch, Hoxie, Mrs. Strattard, Kenniston, Nowell, Briggs, Staples, Lapham.

35. Early Harvest. Mrs. A. B. Strattard, \$1; H. J. A. Simmons, 50c.

Dunton.

36. Early Strawberry. Not awarded.

Alfred E. Mitchell, Lewiston.

37. Fall Harvey. Miss L. L. Taylor, \$1; A. G. Thurlow, Poland, 50c.

Emerson, Gardiner, Bennoch, Towle.

38. Fall Pippin. J. J. Towle, \$1; H. J. A. Simmons, 50c.

Farrar, Gardiner, Lapham.

39. Fameuse. F. E. Nowell, \$1; S. W. Shaw, 50c.

Gardiner, Harris, Simmons, Pittee.

40. Franklin Sweet. Perley & Perkins, \$1; G. W. Blossom, 50c.

Sweetser.

41. Garden Royal. J. J. Towle, \$1; J. E. Bennoch, 50c.

42. Gravenstein. Miss L. L. Taylor, \$1; E. N. Nelson, Minot, 50c.

Farrar, Dunton, Gardiner, Bennoch, Staples, Lapham, G. W. Blossom, Harris, Shaw, Sweetser.

43. Hightop Sweet. Perley & Perkins, \$1; H. J. A. Simmons, 50c.

44. Hubbardston Nonsuch. Miss L. L. Taylor, \$1; A. J. Osgood, 50c.

Emerson, Lapham, G. W. Blossom, Perley & Perkins, Wharff.

45. Hunt Russet. Elmas Hoffses, \$1.

Gardiner, Staples, G. W. Blossom, Mrs. Strattard.

46. Jewett's Fine Red. W. R. Wharff, \$1; Miss L. L. Taylor, 50c.

Whitcomb, Dunton, Sweetser; O. F. Frost, Monmouth, presented fine specimens too late for entry.

47. King of Tompkins County. S. R. Sweetser, \$1 ; Miss L. L. Taylor, 50c.

Sawyer, Dunton, Chipman, Bennoch, Farrar, True, Kenniston, Whitecomb, Staples, Thurlow, Lapham, G. W. Blossom, Harris, Shaw, Nowell, Perley & Perkins.

48. King Sweeting. Miss L. L. Taylor, \$1 ; Perley & Perkins, 50c.

Nowell, Hoxie.

49. Large Yellow Bough. E. A. Lapham, \$1 ; Perley & Perkins, 50c.

True, Whitecomb, Chipman, Gardiner.

50. Minister. Elmas Hoffses, \$1 ; G. W. Blossom, 50c.
Lapham.

51. Moses Wood. Miss L. L. Taylor, \$1 ; W. R. Wharff, 50c.
Gardiner, Perley & Perkins.

52. Mother. Ivory W. Emerson, \$1 ; R. H. Gardiner, 50c.
G. W. Blossom.

53. Northern Spy. R. H. Gardiner, \$1 ; E. A. Lapham, 50c.
Miss Taylor, L. H. Blossom, Emerson, Farrar, Chipman, Bennoch, Staples, Ham, G. W. Blossom, Nowell, Perley & Perkins, Sweetser.

54. Orange Sweet. G. B. Sawyer, \$1 ; E. H. Kenniston, 50c.
Simmons, Hoxie.

55. Peck's Pleasant. E. A. Lapham, \$1 ; G. K. Staples, 50c.
True.

56. Pomme Royale. No entry.

57. Porter. W. R. Wharff, \$1 ; Charles A. Day, 50c.
Miss Taylor, Litchfield, Whitecomb, Dunton, Lapham, Gardiner, Simmons, Sweetser, Perley & Perkins.

58. President. L. H. Blossom, \$1 ; G. W. Blossom, 50c.

59. Primate. Miss L. L. Taylor, \$1 ; H. J. A. Simmons, 50c.
Staples.

60. Pumpkin Sweet. Ivory W. Emerson, \$1 ; R. H. Gardiner, 50c.

Miss Taylor, G. W. Blossom.

61. Red Astrachan. N. W. Harris, \$1 ; S. R. Sweetser, 50c.
Simmons, Nowell, Gardiner, Lapham, Hoxie, Mrs. Strattard.

62. Red Canada. R. H. Gardiner, \$1.

63. Red Russet. Not awarded.
S. W. Shaw.

64. Rhode Island Greening. Miss L. L. Taylor, \$1; L. H. Blossom, 50c.

Farrar, True, Kenniston, Whitcomb, Dunton, Gardiner, Lapham, G. W. Blossom, Harris, Perley & Perkins, Wharff; B. F. Teague, Auburn.

65. Rolfe. No entry.

66. Roxbury Russet. W. R. Wharff, \$1; D. P. True, 50c.
Kenniston, Gardiner, Perley & Perkins, Sweetser, Miss Taylor.

67. Sops of Wine. H. J. A. Simmons, \$1; Miss L. L. Taylor, 50c.

Whitcomb, Gardiner, Staples.

68. Somerset. Miss L. L. Taylor, \$1; J. E. Bennoch, 50c.

69. Starkey. Perley & Perkins, \$1.

70. Talman's Sweet. S. W. Shaw, \$1; J. J. Towle, 50c.

Farrar, True, Kenniston, Gardiner, Hoffses, Lapham, G. W. Blossom, Nowell, Perley & Perkins, Sweetser.

71. Tetofsky. G. B. Sawyer, \$1.

72. Wagener. N. W. Harris, \$1; F. E. Nowell, 50c.
Simmons, L. H. Blossom, Staples, Sweetser.

73. Williams' Favorite. Miss L. L. Taylor, \$1; J. S. Hoxie, 50c.
Mrs. Strattard, Carey, Nowell.

74. Winthrop Greening. W. R. Wharff, \$1; E. A. Lapham, 50c.

Miss Taylor, True, Litchfield, Gardiner, G. W. Blossom, Nowell.

75. Yellow Bellflower. R. H. Gardiner, \$1; E. A. Lapham, 50c.

G. W. Blossom, Dunton, Miss Taylor.

76. Crab Apples. H. J. A. Simmons, (*Transcendent*,) \$1; G. K. Staples, (*do.*) 50c.

True, Litchfield, Lapham, Perley & Perkins.

Sundries. Beauty of Kent, exhibited by Kenniston, Whitcomb, Ham. Maiden's Blush; Emerson, Thurlow. Ben Davis; Kenniston, Emerson, Dunton. Wine Apple; Kenniston, Whitcomb. Colvert; Teague, Dunton. Fairbanks, Jersey Sweet, Gloria Mundi, Hubbardton Pippin, Ribston Pippin. Winter Stripe, Napoleon, Cooking Red, Richards' Graft, by R. H. Gardiner. Walbridge; Lapham. Willow Twig and Rambo; Staples. Granite Beauty and Honey Sweet; Simmons. There were also several specimens with local names and a few unknown.

Class 2—PEARS.

“Entries for premiums Nos. 77, 78 and 79, must consist of five specimens of each variety exhibited.”

77. For best general exhibition of pears. Samuel Rolfe, Portland, \$12; D. P. True, \$8; L. J. Perkins, Deering, \$5; J. E. Bennoch, \$3.

Chipman, Sawyer, Perley & Perkins.

78. For best five named varieties of Autumn Pears. D. P. True, \$3.

79. For best five named varieties of Winter Pears. No entry.

“Entries for premiums Nos. 80 to 109, inclusive, must consist of five to ten specimens, according to size, of each variety exhibited.”

80. For best single variety of Fall Pears. Nelson Ham, \$2; C. H. Bradford, Turner, \$1.

D. P. True.

81. For the best single variety of Winter Pears. D. P. True, \$2; L. K. Litchfield, \$1.

82. For the best dish of Bartlett. L. K. Litchfield, \$1; A. G. Thurlow, 50c.

Miss Taylor, Nelson, E. M. Leavitt, Auburn; A. C. Symmes, Auburn.

83. Bell Lucrative. S. W. Shaw, \$1; G. B. Sawyer, 50c.
J. S. Hoxie.

84. Beurre d' Anjou. Israel Mitchell, Lewiston, \$1; G. B. Sawyer, 50c.

Symmes, True.

85. Beurre Bose. No entry.

86. Beurre Hardy. R. H. Gardiner, \$1.

87. Beurre Superfine. D. P. True, \$1; D. J. Briggs, 50c.

88. Beurre Clairgeau. G. B. Sawyer, \$1.

89. Beurre Diel. Ivory W. Emerson, \$1; D. J. Briggs, 50c.
Sawyer, True.

90. Buffum. E. N. Nelson, \$1; D. P. True, 50c.
Sawyer, Litchfield.

91. Clapp's Favorite. A. C. Symmes, \$1; Rufus Prince, 50c.
W. H. Young, Gardiner, Sawyer, Briggs, Carey, Hoxie, Bennoch; A. E. Frost, Lewiston.

92. Doyenne Boussock. Not awarded.
93. Duchess d' Angoulenne. E. N. Nelson, \$1; Perley & Perkins, 50c.
True, Symmes, Bennoch.
94. Flemish Beauty. Perley & Perkins, \$1; R. H. Gardiner, 50c.
Emerson, Briggs.
95. Fulton. Not awarded.
96. Glout Morceau. D. J. Briggs, \$1; L. K. Litchfield, 50c.
97. Goodale. Miss L. L. Taylor, \$1; Perley & Perkins, 50c.
98. Howell. E. N. Nelson, \$1; L. K. Litchfield, 50c.; Israel Mitchell, *gra.*, 50c.
Sawyer, Gardiner, Ham.
99. Josephine de Malines. No entry.
100. Lawrence. Miss L. L. Taylor, \$1; D. P. True, 50c.
Sawyer, Shaw, Nelson.
101. Louise Bonne de Jersey. E. N. Nelson, \$1; Israel Mitchell, 50c.
Emerson, Symmes, Gardiner, Briggs.
102. Maria Louise. No entry.
103. Nickerson. Miss L. L. Taylor, \$1.
Gardiner, Perley & Perkins.
104. Seckel. D. J. Briggs, \$1.
Alfred E. Mitchell, Lewiston.
105. Sheldon. Miss L. L. Taylor, \$1; Ivory W. Emerson, 50c.
Perley & Perkins.
106. Swan's Orange. J. E. Bennoch, \$1; Rufus Prince, 50c.
107. Urbaniste. G. B. Sawyer, \$1.
108. Vicar of Winkfield. D. P. True, \$1; A. B. Chipman, 50c.
Perley & Perkins.
109. Winter Nelis. E. M. Leavitt, \$1; R. H. Gardiner, 50c.
- Sundries.* Rufus Prince exhibited Dearborn's Seedling; D. J. Briggs, Columbia, Beurre Duval; R. H. Gardiner, St. Ghislain; G. B. Sawyer, Kirtland, Ott's Seedling.

Class 3—GRAPES.

110. For best exhibition of foreign grapes, grown with fire heat. Miss Mellie Baker, Lewiston, \$10; John Vickery, Auburn, \$8.

111. For best exhibition of foreign grapes, grown in cold grapery. G. B. Sawyer, \$8.

112. For best cluster Black Hamburg. Miss Mellie Baker, \$1; G. B. Sawyer, 50c.

113. White Frontignan. No entry.

114. Grizzly Frontignan. No entry.

115. White Muscat. G. B. Sawyer, \$1.

116. Muscat Hamburg. G. B. Sawyer, \$1.

117. White Chasselas. Miss Mellie Baker, \$1; G. B. Sawyer, 50c.

118. Lady Downes. No entry.

119. Buchland Sweet-Water. G. B. Sawyer, \$1.

120. Trentham Black. G. B. Sawyer, \$1.

121. West's St. Peters. No entry.

122. White Nice. No entry.

123. Red Chasselas. Miss Mellie Baker, \$1.

124. Chasselas Mnsque. Miss Mellie Baker, \$1; G. B. Sawyer, 50c.

125. For the best collection of Native grapes (open air). J. S. Hoxie, \$6; Perley & Perkins, \$4; D. P. True, \$2.

126. Best single variety, (open air). Perley & Perkins, \$2; D. P. True, \$1.

127. Best three bunches Delaware. W. R. Wharff, \$1; G. B. Sawyer, 50c.

True, Vickery, Perley & Perkins; J. T. Waterman, East Auburn.

128. Concord. W. R. Wharff, \$1; Perley & Perkins, 50c.

True, Vickery.

129. Hartford Prolific. W. R. Wharff, \$1; J. S. Hoxie, 50c.

True, Briggs, Sawyer, Perley & Perkins.

130. Rebecca. No entry.

131. Allen's Hybrid. No entry.

132. Creveling. Perley & Perkins, \$1.

133. Adirondac. No entry.

134. Massasoit. No entry.

135. Wilder. No entry.

- 136. Lindley. J. S. Hoxie, \$1.
- 137. Agawam. No entry.
- 138. Merrimac. No entry.
- 139. Salem. Not awarded.
- 140. Worden. Perley & Perkins, \$1.

Sundries. John Vickery exhibited Sweet-Water and Martha, grown with fire heat, also two varieties unknown; G. B. Sawyer, Diana, Iona and Allen's Hybrid, grown in cold grapery; D. J. Briggs, Clinton and Blood's Seedling.

Class 4—PLUMS.

141. For the best general exhibition of plums, not less than ten varieties. No entry.

“Entries for premiums Nos. 142 to 160, inclusive, must consist of not less than twelve specimens each.”

142. For best dish of plums of a single variety. G. B. Sawyer, (*Washington*), \$2; D. P. True, \$1.

143. For best dish of Green Gage. No entry.

144. Purple Gage. Nelson Ham, \$1; G. B. Sawyer, 50c.

145. Red Gage. No entry.

146. Yellow Gage. No entry.

147. Prince Imperial Gage. H. J. A. Simmons, \$1.

148. Coe's Golden Drop. No entry.

149. General Hand. No entry.

150. Lawrence. No entry.

151. Moore's Arctic. No entry.

152. McLaughlin. No entry.

153. Reine Claude de Bavay. W. H. Young, \$1.

154. Lombard. Nelson Ham, \$1; Thomas H. Longley, 50c.
True, Young; Frank Burrill, Lewiston.

155. Columbia. No entry.

156. Magnum Bonum. No entry.

157. Washington. G. B. Sawyer, \$1; T. H. Longley, 50c.

158. Jefferson. No entry.

159. Penobscot. J. S. Hoxie, \$1.

160. Smith's Orleans. No entry.

Sundries. G. B. Sawyer exhibited Victoria; Frank Burrill, Bradshaw; L. K. Litchfield and Nelson Ham, varieties not named.

Class 5—MISCELLANEOUS.

161. For best dish of peaches. Fogg & Goss, Lewiston, seedlings, \$2; George H. Harmon, Auburn, \$1.

162. For best dish of apricots. No entry.

163. " " nectarines. "

164. " " quinces. "

165. " peck cultivated cranberries. Seward Dill, Phillips, \$2.

166. Samples of nursery apple trees. Not awarded.

I. C. Merrill, Lewiston, exhibited trees of Pewaukee, Northern Spy, Mann, Tetofsky, Walbridge, Grimes' Golden and Baldwin. The trees were well grown, but the varieties exhibited were not satisfactory to the committee.

167. Nursery pear trees. No entry.

168. " grape vines. D. P. True, 50c.

169. Best orange tree, in fruit. No entry.

170. " lemon " " "

171. " fig " " "

Sundries. Mrs. B. A. Townsend, Freeport, pineapple, *gra.*, \$1; James Vickery, Portland, oranges, *gra.*, \$1; Frank Burrill, figs.

Class 6—FLOWERS.

"In this class no article can be entered for more than one premium."

FIRST DIVISION.

171. For best display of cut flowers, filling not less than 100 phials. Mrs. G. B. Sawyer, Wiscasset, \$10; Mrs. Charles Stanley, Winthrop, \$8; Geo. M. Roak, Auburn, \$5; Miss M. L. Pope, Manchester, \$3; Mrs. A. B. Strattard, Monroe, \$2.

172. For best exhibition of roses, not less than five varieties. W. E. Morton, & Co., Portland, \$2.

173. Dahlias, not less than ten varieties. Mrs. Charles Stanley, \$2.

174. Chinese Pinks. No entry.

175. Carnations, not less than five varieties. W. E. Morton & Co., \$2.

176. Japan Lilies. W. E. Morton, \$2; Mrs. A. B. Strattard, \$1.

177. Asters, not less than ten varieties. Miss M. L. Pope, Manchester, \$1; Geo. M. Roak, 50c.

John Burr, Freeport; Miss Ida M. Litchfield, Winthrop; Mrs. Stanley, Mrs. Strattard.

178. Pansies. W. E. Morton & Co., \$1; Mrs. Charles Stanley, 50c.

Mrs. Strattard.

179. Zinnias. Mrs. Chas. Stanley, \$1.

180. Phlox Drummondii. Mrs. Charles Stanley, \$1; Miss M. L. Pope, 50c.

181. Stocks. Miss M. L. Pope, \$1.

182. Balsams. Mrs. Chas. Stanley, 50c.

183. Chrysanthemums. No entry.

184. Petunias. Mrs. A. B. Strattard, \$1; Miss Ida M. Litchfield, 50c.

185. Gladiolus. W. E. Morton & Co., \$2.

186. Verbenas. Miss M. L. Pope, \$2; John Burr, \$1.
Roak, Mrs. Strattard.

SECOND DIVISION.

187. For best pair of parlor bouquets. Mrs. C. Stanley, \$1; Mrs. M. E. Thomas, Rockland, 50c.

188. Pair wall bouquets. Mrs. C. Stanley, \$1; Miss I. M. Litchfield, 50c.

189. Pair hand bouquets. W. E. Morton & Co., \$1; Mrs. C. Stanley, 50c.; Mrs. M. E. Thomas, 25c.

190. Floral pillow. W. E. Morton & Co., \$5.

191. Floral design. Geo. M. Roak, \$5; W. E. Morton & Co., \$3; Mrs. A. B. Strattard, \$1; Mrs. C. Stanley, \$1.

192. Floral wreath. W. E. Morton & Co., \$2; Mrs. C. Stanley, \$1.

193. Dinner table decoration. W. E. Morton & Co., \$2.

194. Basket wild flowers. Miss Edith Leavitt, Auburn, \$1.
Miss I. M. Litchfield.

195. Dried grasses. Mrs. C. Stanley, \$2.

196. Everlasting flowers. Mrs. A. B. Strattard, \$1; Mrs. A. C. Pierce, Lewiston, 50c.

197. Dish cut flowers. W. E. Morton & Co., \$2; Miss I. M. Litchfield, \$1.

198. Fancy basket of flowers. W. E. Morton & Co., \$2; Miss I. M. Litchfield, \$1; Mrs. M. E. Thomas 50c.
Bouquet Asters. R. H. Gardiner, 50c.

THIRD DIVISION.

199. For best exhibition of greenhouse plants. John Burr, \$8; G. M. Roak, \$5.
200. For best exhibition of pot plants, not less than 20 pots. Miss Alice M. Jordan, Auburn, \$3.
“Persons exhibiting greenhouse plants, (No. 199), cannot compete for premium No. 200.”
201. For best exhibition of ferns. John Burr, \$3; G. M. Roak, \$2.
202. Geraniums. John Burr, \$2; G. M. Roak, \$1.
203. Begonias. John Burr, \$2; G. M. Roak, \$1.
204. Coleus. G. M. Roak, \$2; John Burr, \$1.
205. Tuberoze. R. H. Gardiner, \$1; John Burr, 50c.
206. Dracæna. G. M. Roak, \$1; John Burr, 50c.
207. Double Geranium. G. M. Roak, \$1.
208. Single “ No entry.
209. Salvia Splendens. G. M. Roak, \$1.
210. Foliage Begonia. G. M. Roak, \$1.
211. Flowering “ John Burr, \$1; G. M. Roak, 50c.
212. Coleus. G. M. Roak, \$1.
213. Fuchsia. John Burr, \$1.
214. Carnation. G. M. Roak, \$1.
215. For best single pot plant. G. M. Roak, \$1.
216. Best hanging basket with plants. No entry.
217. Best climbing plant, on trellis. Miss Alice M. Jordan, \$1.
218. Wardian case. No entry.
219. Aquarium. “
220. Rustic stand. “

Proceedings of the Winter Meeting.

The ninth Winter Meeting of the Society, (being an adjournment of the annual meeting which was held at Lewiston, September 20. 1883), was held at Lemont Hall in Brunswick, on the 22d and 23d days of January, 1884, in connection with a Farmers' Institute under the direction of the Secretary of the Board of Agriculture.

In point of number and interest of the members and other persons attending, as well as in the importance of the subjects considered, the meeting compared favorably with any previous Winter Meeting. The division of the time between the Society and the Board of Agriculture rendered it impossible to give to all of the subjects presented as much attention as some of the members thought desirable, and prevented the reading of a portion of the papers prepared for presentation. These circumstances led to some unfavorable criticism *afterwards*: but it is easier to find fault with what has been done than to foresee difficulties—and it is respectfully submitted that a busy meeting, in which the time is fully occupied, even if some matters of secondary importance are excluded, is better than one at which the interest lags and members have to be urged to "occupy the time." There are also important economical considerations affecting both the Society and the individuals attending, in favor of a joint meeting. There was no subject presented in the programme, in either department, undeserving of the attention of any person attending, whatever his own specialty might be. But the subject, with respect to future meetings, is in the hands of the members, and the Executive Committee desire nothing more earnestly than that they will make their wishes known with respect to this and all other questions affecting the management of the Society's affairs, at a proper time and in an appropriate manner.

Three sessions were held on each of the two days of the meeting, and the following is an abstract of the record, showing how the time was occupied:

TUESDAY, JANUARY 22.

MORNING SESSION—9 A. M. Formal meeting of the Pomological Society.

10 A. M. Meeting under the direction of the Board of Agriculture. Lecture on "Co-operative Butter Making," by Z. A. Gilbert, followed by a discussion of the subject.

AFTERNOON SESSION—1.30 P. M. Meeting of Pomological Society. Address of welcome by A. G. Tenney of Brunswick, and reply.

Address by the President on the general subject of orcharding.

Paper by T. S. McLellan of Brunswick, on the same subject, read by the Secretary.

Remarks by Z. A. Gilbert on the apple maggot.

Paper by C. G. Atkins, entitled "Studies on the Codling Moth," read by C. J. Gilman, Esq.

Remarks and resolutions offered by Mr. Henry S. Smith of Monmouth, in relation to the extermination of injurious insects.

EVENING SESSION—Paper by Hon. Rufus Prince of Turner, President of the State Agricultural Society, entitled "My Experience in Orchardng, and its Lessons."

"Railroad Gardening," by John Burr of Freeport.

"Floriculture," by Mrs. A. B. Strattard of Monroe.

Papers by Mrs. M. D. Welcome of Yarmouth, on "Ornamental Foliage Plants," and by Albion Cobb, M. D., of Webb's Mills, on "Botany as a Guide to the Cultivation and Improvement of Fruits and Flowers." read by Hon. C. J. Gilman.

Remarks by Rev. S. F. Dike of Bath.

WEDNESDAY, JANUARY 23.

MORNING SESSION—9 A. M. Business meeting of the Pomological Society. The report of the Treasurer for the year 1883 was presented, and having been examined and approved by the Executive Committee, was accepted, and is as follows :

GEO. B. SAWYER, *Treasurer*,

IN ACCOUNT WITH MAINE STATE POMOLOGICAL SOCIETY.

DR.

To cash in the treasury, January 1, 1883,	\$99 05	
Am't rec'd from the State, bounty of 1882,	500 00	
“ “ on loans,	400 00	
“ “ of life members.	40 00	
“ “ “ annual members,	33 00	
“ “ of State Agricultural Society,	325 00	
“ “ from interest, Permanent Fund,	17 20	
“ “ “ donations,	9 50	
	<hr/>	
	\$1,423 75	
Balance due Treasurer December 31, 1883,	24 81	
	<hr/>	\$1,448 56

CR.

By am't paid loans,	\$340 00	
“ “ interest on loans,	14 55	
“ “ orders of Executive Committee,	248 01	
“ “ John Hanscom, on contract,	90 00	
“ “ Secretary, salary,	100 00	
“ “ Premiums of 1882, balance,	234 50	
“ “ “ winter meeting 1883,	31 25	
“ “ “ annual exhibition 1883,	390 25	
	<hr/>	\$1,448 56

Amount on deposit to credit of Permanent Fund, \$344 40.

ANALYSIS OF CASH ACCOUNTS.

The expenditures for the year, as will be seen, amount to \$1,448 56
 Of which there was paid on loans and interest, 354 55

Balance, current expenses,		\$1,094 01
Consisting of the following items :		
Premiums,	\$656 00	
Salary of Secretary, in part,	100 00	
Printing,	90 00	
Expenses of winter meeting,	} 21 04	
not including premiums,		
“ annual exhibition,	} 98 14	
not including premiums,		
Purchase of plates and utensils,	72 24	
Postages and express bills,	23 14	
Miscellaneous expenses,	33 45	
		<hr/> \$1,094 01

This amount has been provided as follows :

Cash in treasury January 1, 1883,	\$99 05	
Am't rec'd from the State,	500 00	
“ “ “ State Agricultural Society,	325 00	
“ “ “ memberships,	73 00	
“ “ “ interest in excess,	} 2 65	
of amount paid,		
“ “ “ donations,	9 50	
Increase of loans from last year,	60 00	
Balance due Treasurer December 31, 1883,	24 81	
		<hr/> \$1,094 01

Loans.

Amount due December 31, 1883,	\$200 00
“ January 1, 1883,	140 00
	<hr/>
Increase,	\$60 00

STATEMENT OF THE FINANCIAL CONDITION OF THE SOCIETY,
 DECEMBER 31, 1883.

Assets.

Amount due from the State, bounty for 1883,	\$500 00	
Property owned by the Society, estimated,	150 00	
	<hr/>	\$650 00

Liabilities.

Am't due on loan,	\$200 00
“ “ premiums, 1883,	167 00
“ “ unpaid orders and bills not rendered, estimated,	200 00
“ “ Treasurer as per his account,	24 81
“ “ Secretary, balance salary,	100 00
“ “ Permanent Fund,	415 60
	<hr/> \$1,107 41

(Deficiency of assets, \$457.41).

Permanent Fund.

Cr. By fees of 76 life members,	\$760 00
Dr. To amount on deposit to credit of fund,	344 40
Balance due fund,	<hr/> \$415 60

Respectfully submitted,

GEO. B. SAWYER, *Treasurer.*

BRENSWICK, January 22, 1884.

Voted, That the salary of the Secretary for the present year be fixed at one hundred dollars.

The Society then, at 10 A. M., took a recess until half past eleven, and in the intervening time a meeting was held under the direction of the Board of Agriculture.

11½ A. M. The Pomological Society, resuming its sessions, proceeded to the election of officers for the current year, with the following result:

For President—William P. Atherton, of Hallowell.

[Mr. Atherton afterwards declined to serve and was excused].

The Society then elected

For President—Charles S. Pope, Manchester.

Vice Presidents—S. C. Harlow, Bangor.

S. R. Sweetser, Cumberland.

Secretary and Treasurer—Geo. B. Sawyer, Wiscasset.

Executive Committee—The President and Secretary, *ex-officiis*, Andrew S. Sawyer, Cape Elizabeth; Leander H. Blossom, Turner; Frank E. Nowell, Fairfield.

Trustees—Androscoggin county, N. W. Harris, Auburn.

Aroostook	“	E. E. Parkhurst, Maysville Centre.
Cumberland	“	Francis C. Jordan, Brunswick.
Franklin	“	G. K. Staples, Temple.
Hancock	“	Charles G. Atkins, Bucksport.
Kennebec	“	Richard C. Plaisted, Gardiner.
Knox	“	Elmas Hoffses, Warren.
Lincoln	“	H. J. A. Simmons, Waldoboro’.
Oxford	“	Jairus K. Hammond, Paris.
Penobscot	“	J. E. Bennoch, Orono.
Piscataquis	“	H. A. Robinson, Foxcroft.
Sagadahoc	“	Henry S. Cary, Topsham,
Somerset	“	James S. Hoxie, North Fairfield.
Waldo	“	D. B. Jackson, Freedom.
Washington	“	Nelson S. Allen, Dennysville.
York	“	Randall Boothby, Limerick.

The following resolution was presented by Mr. C. J. Gilman, and was unanimously adopted, viz :

Resolved, That the Society extends its thanks to the Hon. Robert H. Gardiner for his faithful and zealous labors as its President during the last three years; and that upon his withdrawal from the Presidency at this time, we tender to him our best wishes for his health and happiness.

AFTERNOON SESSION. The report of the committee on the fruit exhibition at the present meeting, was presented by Mr. Rufus Prince, Chairman, and was accepted.

Proceeded to the discussion of the paper read by Mr. Prince at last evening’s meeting, after which,

A paper on “Pear Culture,” by D. P. True of Leeds Centre, was read by the Secretary.

A paper on “Gardening for Profit,” by Mrs. A. L. Hersey of Oxford, was read by Mr. Z. A. Gilbert.

The report of the Corresponding Secretary was read by the Secretary, and was accepted.

Voted, That the several papers prepared for this meeting, and not read for want of time, be referred to the Secretary, with instructions to publish such of them, and of the papers read, in the next annual report, as the limits of the work will admit, giving preference to those papers relating to fruit and flower culture.

The Secretary reported the decease of the following named life members of the Society, viz:

William C. Crosby of Bangor. February 20, 1880.

Isaiah Stetson of Bangor.

J. M. Richardson of Greene.

George Jewett of Portland. April 17, 1883.

Eliphalet Clark of Deering, June 8, 1883.

Mason J. Metcalf of Monmouth, June 23, 1883.

Albert Emerson of Bangor, December 2, 1883.

Voted, That the Secretary prepare or cause to be prepared appropriate notices of said deceased members for publication in the annual report.

Voted, that the Committee on Russets present their report to the Secretary.

On motion of Mr. Gilbert, a standing committee on new fruits was appointed, consisting of Messrs. W. P. Atherton and S. L. Boardman.

On motion of Mr. Boardman, a committee was appointed, consisting of Messrs. S. L. Boardman, Rufus Prince and Charles S. Pope, to prepare and report to the next annual meeting a plan of action for the proper representation of this Society and State at the International Horticultural Exhibition to be held at New Orleans in December, 1884.

Voted, that the thanks of the Society be extended to the Sagadahoc Agricultural Society for the facilities afforded for holding this meeting; also to the Maine Central and Knox & Lincoln Railroads for reduction of fares, and to the several persons who have furnished papers to be read at this meeting.

Adjourned without day.

ATTEST: GEO. B. SAWYER, *Secretary*.

Memorandum. On the evening of the last day of the meeting an address was delivered by Hon. B. G. Northrop, L. L. D., of Connecticut, on "Rural Life and Homes," before a joint meeting of this Society and the Sagadahoc Agricultural Society.

The Work of the Winter Meeting.

ADDRESS OF WELCOME.

By A. G. TENNEY, of Brunswick.

Mr. President and Gentlemen of the State Pomological Society, and Members of the Board of Agriculture:

It is made my pleasant duty to welcome you to this town, one of the oldest, being the eleventh town incorporated in the State. We are not an agricultural community in the proper sense of the word, though we have fine farms in this locality, some farms that are kept in good condition, and some cultivators of fruit. Our soil is not fertile; we are exposed to atmospheric conditions which make it almost impossible for us to cultivate the finest fruit. It is said that varieties of apples which, thirty miles from here, will grow fair, and well developed, will be here almost undeveloped or badly developed. Therefore we welcome you with all the more pleasure, as you bring us some of your fruits, as well as instruction in the methods of culture in making one of the finest displays upon your tables. We are glad to see you and hope it will be an incentive to *us* to do the best we can under the circumstances that exist.

I might say to you perhaps — no, I cannot quite do that, because it is out of season and I am too good a respecter of law,— but I will refer to John Josselyn's first visit in 1638. He wrote a work entitled "New England Rarities Discovered." In it he says: "The Pejepschut river is famous for multitudes of mighty large sturgeon. Trouts there be in good store in every brook, ten and twenty inches long." Now, there are some of us here, who would be glad to know where those brooks are to be found. The difficulty now is, to avoid the law in catching them five inches in length.

When in Aroostook county several years ago, the varieties of fruit were few and small, but still, what there were were in very good condition; but the farmers said they had been making a mistake; they had been getting their trees from New York, and the result had been that many of their trees had died, and those that lived had borne fruit in imperfect condition. I was there again in

1878, and the improvement in fruit was perfectly surprising ; I found apples as fine as any I have seen anywhere. I found that instead of getting their trees from New York nurseries, they were getting them from Maine nurseries. But I have no doubt that gentlemen here can talk about that better than I can. I am glad to greet you ; I feel that it is highly important that these meetings should be held and I cannot doubt that the largest possible benefit will accrue to the State from these gatherings. I will again refer to this exhibition of fruit as one of the finest I ever saw, and that is double cause why we should welcome you upon this occasion.

RESPONSE,

By HON. Z. A. GILBERT.

Mr. Chairman, Ladies and Gentlemen :

In consequence of the inability of the President to respond, being much out of health as we all know — pleased as he would be to reply to a welcome of this kind ; and as appreciative as he is of the greeting which has been tendered to us — I consented to make the reply.

It is certainly gratifying to our Society to be thus assured that we meet a welcome among the people with whom we assemble to-day. Our Society was organized some years ago from a necessity for special work in the direction of fruit culture in the State. Fully realizing as we did, that the industry was one worthy of special encouragement in our State, the Society seemed a necessity. At one of its earliest meetings the remark was made by its President that the industry here among us was apparently in its infancy, although for many years it had received large attention from leading fruit growers in the State ; and that if we could encourage the business through special effort, so that our meetings should largely increase, we should find our advantages from it increased in like measure, that we should be able to put upon the market a hundred or a thousand barrels of apples where we were then putting *one* ; and we should find a quicker market and more purchasers. Some of the members were hardly able to assent to that position, but subsequent events have proved the truth of the claim then put forth. We have since that time increased the productions of the fruit in our State largely ; we are beginning to attract the attention of buyers now, as we put a larger quantity of our leading late-keeping

fruits upon the market, we find that purchasers are seeking for them, that the market is quicker, the demand is surer, and we now fully believe we can go on increasing it in the same ratio and that in the future we shall find our market still improving, and there is from present appearances no limit to the demand for our special fruits grown here in the State of Maine.

So we have, as a Society, the encouragement and assurance that we are at work in a good cause; and we would assure the citizens of this county and the gentleman who has so kindly expressed their welcome, that the Society needs this encouragement. Working as we have been without any other reward than the knowledge of earnest work in a good cause, and unless we meet sympathy and receive some encouragement, that work, after a time, tires. But with such assurances and with the knowledge that there is still an appreciation of this work, we can go on, and it is our determination to go on and encourage this industry. We have also the assurance that there is at the present time a universal interest in the fruit industry. Those who are producers are not the only ones interested. Consumers, as well, from a different standpoint, are alike interested, and the producer and consumer meet together and encourage each other, which is one of the advantages derived from a meeting of this kind.

The fruit exhibited here was pleasantly referred to by the gentleman who gave us this welcome, and this is an inspiration to all concerned; it is an inspiration and encouragement to the producer and a tempting appetizer to the fruit consumer; so there is a benefit to all accruing from such an exhibition.

The membership of our Society is more limited than we wish, and we would like to have it understood that the list is open for additions; and while we do not propose to pursue any special canvassing in this direction, we would be glad to enroll still others upon the list.

There is no particular locality which is exempt from this interest in fruit growing. As the gentleman has referred to the more easterly part of the State, I will add that we find greater encouragement in these border lands of the State in the direction of fruit production than we hardly dared to hope, even the few years ago that this Society was organized. In the County of Piscataquis are to be found as thrifty and productive orchards as are to be found in any section of our State. A better knowledge of the business

prevailing among those orchardists has enabled them to select varieties to suit their localities, and they are meeting with the highest success in that direction at the present time. With respect to the famous County of Aroostook, I must acknowledge that I had my fears with regard to the success of the business in that locality. But as time goes on, as they learn from experience, even then there is very much more of encouragement in this direction than existed a few years ago, and the effort of the Society to introduce some of the new varieties there, adapted to the locality, has already manifested itself in better fruit trees and in a considerable abundance of fruit in certain localities, giving promise that in course of time that county is to supply itself with fruit. So we are able to say that the whole State is embraced and interested in this industry. Thus while we meet here to-day in this central locality, we may bear in mind that our work is not confined in its effects to this section of the State, but that it is a wide-spread influence, reaching to our furthestmost borders.

While possibly, as the speaker has said, fruit culture has not assumed that special importance here that it has in some localities, still we know that there are those here interested in the business and meeting with success, and that this locality is not an exception in this regard. So we have much to encourage us, and for every word of sympathy and every expression of welcome which may come from any locality, and especially here and now, we wish to extend our thanks.

ADDRESS BY THE PRESIDENT, HON. ROBERT H.
GARDINER.

Gentlemen of the Pomological Society, Ladies and Gentlemen:

It is announced in the programme that an address may be expected this afternoon from the President. I am sorry to say that he is not prepared to make a formal address, but instead will venture to say a few words upon

ORCHARDING.

There are so many admirable books with full directions for forming an orchard, and giving all the requirements for success, and so much too is constantly appearing in our ably conducted agricultural papers, that it may seem a work of supererogation to discuss the subject here, and yet inquiries are so often made by beginners, it has seemed to me that a few words upon the mode of preparing an

orchard, its after-cultivation, and the gathering and marketing the fruit, though an oft told tale, might perhaps be of use to some, if reiterated at this our winter meeting.

In the first place, I would advise every one who has already started an orchard, to begin a nursery by sowing seeds. When an orchard has been planted, it is a safe calculation to make, that about ten per cent of the trees must be renewed annually for some years. The trees when small may be broken down by the wind, or accident, or killed by borers. With a nursery of one's own these can be replaced in a more satisfactory manner than by purchase, and at a trifling cost. The seeds should be sown in drills, and the second year after, the trees shall be taken up and planted in rows two or three feet apart and well manured and cultivated. The next thing to be considered is grafting, of which there are several modes. I have often practiced *splice* grafting with success, but with this mode the body of the tree, or of the branch to be grafted, should not be much larger than the cion. For some trees, especially the Bell-flower, which is inclined to split at the forks, it is much better to graft the branches, and for this, splice grafting is an admirable method.

Budding is another mode, and in this I have been very successful. The time for this is in August, as soon as the buds are well formed. The process is very simple, and the advantages are, that if the bud takes you gain time, and if it fails your tree is not injured as it would be by the failure of a graft. In budding it is best always to use waxed strips of cloth, and after two or three weeks have elapsed if you find the buds have taken, cut across the waxed cloth on the side opposite to the bud, to allow the bud to swell. It is generally recommended to cut off the wood beyond the bud, in the spring when the bud begins to grow, but I much prefer to allow the old wood above the bud to remain till the bud is nearly the size of the stock, as in this way the bud, as it grows, can be tied to the stock as to a stake, but care must be taken to cut off all leaves that appear on the stock above the bud. I have probably one hundred trees in bearing that were budded. I do not speak of the usual modes of grafting, as they are familiar to everyone. In planting out apple trees I am satisfied that thirty feet each way is the best distance. For the first ten years, twenty feet might do, but after twenty years, thirty feet will prove to be the best. Great care should be taken in planting. Dig the hole as large as the roots, and a foot deeper than you wish to set the tree, then all around the hole undermine the

ground for a foot or more, fill up the hole a foot with good earth, making a little mound in the centre, set your tree upon this, stretching out the roots carefully, having first taken care to trim any broken root smoothly, and cover the roots with rich earth, shaking the tree so that there shall be no hollow spaces, and then firm the ground around the tree with your feet. Planted in this manner, the roots strike out into the good loose earth surrounding them, and grow rapidly.

To have a handsome orchard it is important to attend to the form of the tree when young, taking care that no branches cross or rub against one another, and that light and air are admitted into the top. By early attention to this, there will be no occasion ever to remove large branches, and the small ones can be removed at any season of the year. If, however, it is necessary to remove large branches, from my experience, I should say, do not do it in the autumn. Many recommend June as the best time for pruning. No doubt it is a good time, but it is a busy season, and beside, one hesitates perhaps about removing a branch which is covered with blossoms. I decidedly recommend March and April as the best time for a general pruning. It is a leisure time, the trees are bare of leaves, and you can see better what branches to cut, and any wounds you make will heal in half the time of those made in autumn. If any branch is cut larger than an inch in diameter, it is of the greatest importance to cover the wound at once with paint, shellac or grafting wax. There is a great difference of opinion as to the proper height from the ground to have the first branches. Some say six feet, so as to allow a team to pass under. The objections to this are, that there is great danger of the trees being moved out of plumb by the wind, it is more difficult to gather the fruit, and the trunk of the tree is exposed to the sun. On the other hand, others would have the trees branch about three feet from the ground. There is convenience in picking, it is true, but it is difficult to get under the tree to cultivate and manure it, and in case sheep or hogs run in the orchard, you will lose a good deal of fruit. I think therefore a medium height is best, say not less than four, nor more than five feet.

No one can expect to succeed with an orchard without constant attention. Who would think of raising corn without cultivating and manuring the land? And if it pays to do this for corn, it certainly will for apples and pears. Nowhere on the farm does the use of

manure pay better than in the orchard, and I believe too that mulching is often of the greatest benefit.

The especial enemies to the apple tree in this section are the borer, the mouse, the tent caterpillar, the codling moth, and the apple maggot. Every tree should be examined twice in the season and all borers removed. The usual method recommended to guard against mice is, after every snow storm to tread down the snow around the tree. This is effectual, but one year there was a heavy fall of snow in April. It being supposed that the winter was over, no attention was paid to the trees, and I lost twenty trees girdled by mice in one day in April. Since then I have always protected all trees less than two inches in diameter by means of a piece of old stove or tin pipe. The pipe costs nothing. Cut it into pieces large enough to go around the tree and about ten inches high. This is but little more trouble and is a sure protection. The simplest remedy for the tent caterpillar is to examine the branches in autumn or winter, and whenever a branch of the eggs is discovered glued on towards the end of a small branch, cut off and destroy it. If, however, some escape detection, the moment the caterpillars are discovered in the spring, destroy them. Follow this course faithfully and the great loss of fruit and injury to the trees that occurred a few years since can never happen.

The apple maggot was particularly destructive with me the past season in the Talman Sweet, Red Astrachan, and Mother apples, but did not trouble other trees. As we are presently to have a paper from the able pen of one who has made a thorough study of the codling moth, I will not now dwell upon it.

When one is about to commence an orchard, the first inquiry he makes is, what varieties shall I plant? The answer must depend very much upon the object sought. If it is merely to have an orchard for *profit*, then the answer is very simple. Turn a deaf ear to all the seductive talk of the tree agent about his wonderful new varieties illustrated by beautiful pictures, and set only the old standards, the Baldwin, Rhode Island Greening, Roxbury Russet, Bellflower and Talman Sweet, and if you have a near market, the Red Astrachan for very early, and the Porter for autumn. But if one wishes to raise apples for family use there are several others that are desirable, such as the Famense, Jewett's Fine Red, Peck's Pleasant, Wagner, Hunt's Russet, and perhaps a few others, but there can be no greater mistake than having too many varieties. If one wishes to have an

orchard which is profitable let them try which of the old standard sorts will do best upon his ground, and then have at least 75 per cent of his trees of this. One man will tell you that nothing is so profitable as the Baldwin, another will say the Roxbury Russet, another perhaps the Bellflower. This depends upon the soil and location, but dealers will go a long way to seek a man who has five hundred barrels of one kind to sell, when he would not cross the street to see a man who has ten barrels each of fifty different kinds. If, however, one has the taste and time to experiment, like Mr. Atkins and others, with the hope of producing a new and superior variety, he is laboring in a good cause, and should have the hearty thanks of every member of our Society, but although his experiments may result in good to the world, there will be no profit to himself.

The next point is the time and mode of gathering the fruit. I ought to have said before that it is very important, if neither sheep nor hogs run in the orchard, to gather daily all the windfalls. Most of these are wormy, and when fallen the worms directly leave the apples and bury themselves in the ground, to be ready for next year's operations.

As to the *time* of gathering—this must of course depend upon the season. A slight frost does not injure apples on the tree, but with the temperature below 28° they will be injured. As a rule, about October 1st is the time to begin to gather winter apples, but generally they will not be injured before the tenth. Various methods are followed in gathering and storing apples. Usually the apples when picked are emptied from the basket into a cart which, when full, is dumped on the barn floor, and on a rainy day or other leisure time are sorted and put in barrels. This plan may do for Baldwins and other firm apples, but will never answer for Bellflowers, Porters, or other tender-skinned varieties. The plan I follow in gathering Bellflowers is, to have three empty barrels under the tree; a little straw is always put in the bottom of the basket, which has a hook attached to hang it to a branch of the tree; when the basket is full, the apples are placed by hand into the barrels—those unquestionably first quality in one barrel, those decidedly refuse in another, and those that are doubtful in the third, to be subsequently sorted. The barrels, when full, are put in the store-room and not headed up till about the time for marketing them. In packing for market, a flour barrel is generally used. Make it a point always to wash out the barrel with water. Merely dusting out the barrel, no matter how

thoroughly, will leave particles of flour, which will injure the appearance of the fruit. Always use water, it is no more trouble. In packing a barrel of first quality, place the first tier of apples with the stalks down; after that put in the apples just as they come, large and small, but taking care to put in none that are bruised. By and by, when the barrels are headed up, they are turned end for end and the bottom is marked, so that that end will be opened and the apples, seen with all their stalks up, add much to their appearance and will always command twenty-five cents more a barrel. A very important point in packing apples is to have the barrel packed so tight that there can be no movement or rattling. To accomplish this, use a screw, an inexpensive affair made for the purpose. With this a barrel can be headed in half the time and there will be no danger of the apples being bruised by transportation.

I cannot allow this opportunity to pass without saying a word about strict honesty in packing. The world is beginning to learn that fruit raised so far north as Maine will keep much longer than that from the south or west of us. Why is it then that Maine apples sell in Liverpool for three shillings (50 cts.) less than those from Canada? It is simply because the Canadian shippers have the reputation of shipping apples that are honestly packed, whereas it is a prevalent custom in Maine to *deacon* their apples, that is: put the large ones at the top and the poor and small ones at the bottom, or in the middle. Dealers in apples, upon receiving a new consignment, always examine one or more barrels, and if they discover unfair packing, at once knock off fifty cents or more in price from every barrel. I have not heard of any apples being sold the past season for more than \$3.50 per barrel, and yet I received \$4.00 for all my Bellflowers from a party who felt sure he could guarantee the entire contents of every barrel as equal in every respect to those on the top. When this mode of packing is universally adopted, Maine apples will command the preference in all the markets of the world.

MY EXPERIENCE IN ORCHARDING AND ITS LESSONS.

By RUFUS PRINCE.

So much theory has been written upon all subjects pertaining to agriculture, that when your Secretary invited me to furnish a paper for this, I decided to give the results of my experience, and what I consider the results of that experience. I am well aware that in a

paper with the above heading, it will be necessary to use the pronoun I so often that it may seem egotistical, still I trust that I may be as ready to state my failures as successes, and 'commencing as I did when a mere child, with no more knowledge of fruit raising than the average boy of fifty years ago who had tastes for this vocation, I must have made many failures. I always loved to labor in the orchard, to watch the opening buds and growing fruit.

My experience commenced with raising pears, or rather pear trees. A neighbor of mine having an old native pear tree, I procured some seeds and raised some twenty-five pear trees. When these trees were old enough to transplant to the orchard, my boyish ideas not being large, I thought I had an immense number, and having no thought of making money, I gave away to my young associates all but about half a dozen, thinking that I had kept all that I should ever want. Of the trees that I kept three are now bearing bountiful crops of Clapp's Favorite, while the remainder have long since gone to the brush pile. Of those given away a few are now large, thrifty trees, but the larger part, although nearly half a century of age, have not yet come to bearing—the larger part being dead and the remainder exemplifying the old adage "He who plants pears, plants for his heirs."

Since arriving at manhood, my mind has changed and I have purchased many pear trees, and I believe that with proper care there is no more reliable or profitable crop raised. The great difficulty in raising pear trees in this State is that we do not realize that they will not stand neglect and still produce crops, like an apple tree. We must ever bear in mind that to raise pears successfully we must treat them bountifully with the best fertilizers.

To illustrate my point I will say that one of the trees from my boyhood nursery had been grafted to Buffum pears, and, although it had been large enough for many years to bear bushels of fruit yearly, still I only occasionally found a specimen. I finally decided to "kill or cure" and boxed up the trunk of the tree almost two feet in height and made a yard some fifteen feet in diameter enclosing the tree. Into this yard I put a litter of Poland Chinas and kept them there some two months, and the result was that the next year I had to prop up my tree to save it. This was eight years since, but the tree continues to bear good crops annually.

Profiting by this experience, and having a small pear orchard near my house, I made a pig yard of it and last season, while almost

everyone was lamenting the almost entire failure of the pear crop, I was propping up my trees to prevent their breaking down under their heavy load of Rostizers, Buffums and Clapp's Favorites. Hence, I think that I can safely say that there is little danger of over-feeding pear trees or their not giving good returns for good feed. Pear trees with me have thus far been much less liable to disease and have less enemies to contend with than apple trees.

About the time I sowed my pear nursery, my father, being a progressive man, went to a neighboring county and hired a man to graft the old orchard—a feat that was then understood by but few. Like other boys, I was much interested and watched attentively during the few days he worked, and the morning after this man left found me in the orchard, armed with my old jack-knife, newly ground, the family hand-saw, and together with the butcher-knife to split the stumps. With these tools I commenced to graft, and you may rest assured that the scions thus set were attentively watched, and when I saw them growing like those set by the wonderful man from abroad my boyish measure was full, and from that day to this what grafting has been done on the old homestead has been done in the family. The grafts thus set were in old trees that have long since yielded to the march of time and have been replaced by others.

Soon after I sowed my pear nursery, in company with an older brother, I procured some apple pomace from a neighboring cider mill and started an apple nursery—I being at this time not more than twelve years of age. We succeeded in raising several hundred nice trees which from time to time were transplanted to the orchard to replace old trees.

After being in the orchard a year or two I found they nearly all toppled over and died. In this way all of our hundreds of trees soon went save less than a score which came to bearing. What the trouble was I knew not, but have since learned that it was that terrible scourge to the orchard, the borer. After arriving at manhood and being settled upon the old homestead of my great grandfather, where my experience in orcharding began, in the fall of 1860, I decided to commence an orchard. I selected six and one-half acres of pasture land that was inclined to the north-west, gravelly loam. This was plowed very deep and heavily dressed with barn manure. I was several years in setting the orchard and during this time and several years afterwards the ground was cultivated and well manured. It was finally seeded down and for several years I cut large crops

of hay, and my trees were thrifty; but this course began to tell upon my trees, and from year to year they made less growth and it became a serious question how I could manure the orchard and not starve other portions of my farm.

Still I knew something must be done for the orchard. I finally decided to pasture with sheep and swine, and last year, although an off year, with the fruit crop nearly a failure in the State, this orchard paid me fifty dollars per acre net, besides being a good sheep pasture. The trees were set thirty feet apart, and set both fall and spring with equally good results.

But I will not tire you with the detail of my work in this direction, but simply say that, as a result of some thirty odd years since commencing orcharding for myself, I find myself in possession of about twenty acres, a larger part of which was set by my own hands. The first orchard I set, the trees were set thirty feet apart, but I now set them twenty-five feet.

In starting an orchard, the first thing to be done after the selection of the site, is to decide upon the varieties to grow and in this one can not be too careful. The first question should be: Is the fruit good? I mean, among the best; and if so, Is the tree a shy bearer? and if so, you can not afford to set it. Then, is it known and appreciated in the markets? If not, although you may think it among the best, being juicy, melting and delicious, an abundant bearer, and there is not a call for it in the markets, do not invest largely in it, as life is too short to risk in this direction, too short to think of building up a variety that is but little known, no matter how good it may be. Better, by all means, cultivate those varieties like the Baldwin and Russet, for which there is always a demand in all markets.

Before setting your trees, plow and pulverize your ground deeply, and then before the tree agent comes along decide upon the varieties you will set, being sure not to have too many. Then make a plan of your orchard, so that you can see at a glance where every variety is, that when a tree dies it can be replaced with the same variety. In this way you can have each variety by itself, and you will not only add beauty to your orchard, but it will add much to the convenience in getting the fruit. Above all things, fight shy of new varieties. Think how many varieties have been placed upon the market within the last two decades with high-sounding names, and for which great prices were asked, but which are now hardly

thought of and which no good fruit grower thinks of setting. I say, think of these things when beset by the tree agent to give an extra price for some new variety which he will tell you not only bears enormous crops every year, but will stand the coldest winter ever known in Greenland. He will inform you that he has perchance a new variety that has never been put upon the market before and that he only sells to a few of the best orchardists, and that the nurserymen that he represents, knowing your reputation as a fruit grower, wished him to be sure and let you have a few, they being possibly the only ones to be sold in town. We take the bait and purchase, only to learn when too late that the same story had been told to scores of others in our own neighborhood. In these and various other ways, we multiply varieties much to our disadvantage. We should study the characteristics of our soil, experiment carefully with new varieties known to be choice and profitable and when we find one adapted to our soil and location make a specialty of it.

I prefer good sized trees for setting, those from six to eight feet in height. I am aware that the prevailing opinion is that small trees are more likely to live than larger ones, but all should recollect that young trees have many enemies to contend with, consequently the sooner you can get them out of the way of these enemies the better, and when I mention among these enemies the borer, cattle, grass, &c., I trust that every one that has set out an orchard and lost the larger part of it will ask himself which of these enemies killed it? or did all combine? Also did he not undertake to shield himself for his neglect of these beautiful trees by cursing the New York apple tree agent while the fault was his own. In the preparation of trees for setting I would rather cut out branches entire to balance the roots that have been cut off in taking up, than head in, as is recommended by most writers, for the reason that the result of heading in is a thick top, the very thing you wish to avoid, rather as I said trim out branches enough to make the top as small as desired.

Set your trees leaning slightly to the south, for if perchance they get inclined in the opposite direction they are sure to be spoiled by what is known as "sun scald." This is caused by the sun striking directly upon the trunk of the tree, thereby causing the bark to die and peel off. So sure is this to occur that I think it would be hard to find a sound tree that had had a northern inclination for any length of time.

Do not be satisfied with growing fruit the bearing year, but feed your trees so that they will produce crops every year. The more one makes fruit growing a specialty the better he will succeed, for the reason that he will study more to make it a success. The orchard may be kept in a growing condition in several ways,—the better way for each one being dependent upon his situation and resources, and either of which will be entirely satisfactory if properly done. If a person has a plenty of common farm-yard manure that is thoroughly decomposed, we believe nothing will give better returns than this, thoroughly incorporated into the soil with plow or cultivator, being always careful while at work with these tools in the orchard.

If you have not a plenty of farm-yard dressing to spare, but have brakes in your pastures, coarse hay or straw to spare for the orchard, you may thoroughly mulch and follow it up year after year with no risk as to the final result. The course that I pursue and the one that my experience teaches to be best for the average farmer is to pasture with sheep or swine. The orchard which I spoke of in the former part of this paper, has been used as a sheep pasture for several years and the trees make good growth and bear as good crops as any one that I know of.

The worst enemy that I have to contend with in the orchard is the borer, and I know of but one sure preventative and that is the death of the pest. A wash occasionally of whale oil soap suds will in a large measure prevent his getting into the tree, still you must ever “watch and pray” and go through your orchards occasionally with the knife and wire and see that this terrible pest does not long remain in the tree. I trust that no one will be so enthusiastic as to believe that he can be successful in raising an orchard without much care and labor. The old adage that “eternal vigilance is the price of success” holds good in fruit raising, and with vigilance, with care, and intelligent labor at all seasons nothing pays better dividends, nothing adds more to the comfort of the family than an orchard, but if one expects to raise fruit without labor, without eternal vigilance, he is in the end doomed to disappointment. I am aware that there is a feeling of distrust among the farmers of Maine. I am aware that many of even our most successful farmers, long to revel in the orange groves of Florida, the cattle plains of Texas, or the wheat fields of Dakota. But, Mr. President, where can we find happier homes than in our own New England, where the apple, the “King

of Fruits," can be ever at hand? What greater attraction can there be than a New England home surrounded by a thrifty, well selected fruit orchard? I would not advise any person that has not a natural taste for fruit raising to undertake it extensively, although for one having a taste in this direction it is our most profitable crop. Still everyone owning an acre of land in Maine should raise fruit enough for his own family. What will add more to the comfort and enjoyment of our long winter evenings than the ever present dish of fruit, raised by our own hands, upon our own farms? Who of common capacity but can have thrifty fruit trees enough to adorn his grounds and fruit enough of his own raising to grace his table at all seasons of the year?

THE NURSERY BUSINESS.

A paper specially contributed for this meeting,

By JOHN J. THOMAS, of New York.

The business of raising and selling young fruit trees is in one respect unlike other commercial business, on account of the time required to prove them in bearing. Most kinds of goods may be examined on the spot and their good or bad quality at once determined by inspection. None but men of long experience can recognize a variety of fruit till they have seen the ripened specimens. For this reason more care is required by the nurseryman to secure the sorts he propagates true to name; and more care must be exercised by the purchaser in procuring his young trees from trustworthy and reliable sources.

For the same reason, there is more opportunity to conceal frauds from the great majority of purchasers, who do not recognize by sight in the growth of young trees what they are. Forty years ago most of the nurseries were full of errors. Sufficient care had not been taken to obtain the genuine sorts from which to propagate, and many were ignorantly but honestly unaware of the harm they were doing in disseminating poor sorts. When the writer of these remarks commenced the nursery business, so abundant were these errors that he adopted and never deviated from the rule of propagating nothing for sale which he had not proved or seen in bearing.

At the present time the best nurseries and those which have an established reputation have reached much accuracy in this respect,

and some could be named from whom the public could procure supplies with almost a certainty without a single mistake. Specimen orchards, thorough acquaintance with the different varieties, and an accurate system of propagating and filling orders, have enabled them to reach this desirable condition in their business. Care in the selection and employment of their travelling agents has enabled them generally to give trees correct to their names through these agents, although it must be admitted that a more completely satisfactory way is to order directly from headquarters.

But there is another part of the business of vending trees, of a very different character. Its success in imposing on the people at large is owing to the ignorance of the people of fruits and fruit establishments. There are some nurseries of secondary character which sell trees to travelling venders who have an entirely irresponsible character. They shield their frauds under the time required to fruit the trees, together with the want of information on the part of purchasers. Not only have the more common fruits been represented by spurious trees, but imaginary things, such as trees which bear strawberries, been sold at triple prices to the ignorant. Multitudes of examples might be given, of the impositions practiced all over the country. The thousands of these impostures discourage many from planting at all, moral improvement is retarded, estates are lessened in value, and an indirect damage is thus inflicted, amounting all together to millions of dollars.

The question at once occurs, What is the remedy? The answer is, *The diffusion of information among the people.* Planters should know the difference between reliable sources on the one hand and buying trees of an unknown agent representing an unknown nursery on the other. Purchasers should understand the harm they are doing by patronizing these frauds, for it is this patronage which causes the imposters to continue in the business. Some mistakenly urge that all tree vending should be suppressed by law. This would be impracticable, for it is essentially an honorable and useful business when divested of its frauds. There are no counterfeits on a worthless bank, and these venders live on the reputation of a good business. Probably nine-tenths of all the nursery trees sold are disposed of by tree agents, and the great point is to distinguish the genuine from the counterfeits.

This discrimination is to be made, in the first place by purchasers informing themselves of the best and most reliable nurseries; by

procuring their catalogues, observing their prices and selecting those sorts which have been long proved valuable, avoiding unknown and high-priced novelties; buying only of agents who can show full credentials of recent date; or still better, where practicable, ordering directly from the nursery. All this will require time, inquiry, care and labor, and possibly years of time, but success in any business is not to be reached without labor. Information may be variously obtained—from neighbors who have studied the subject; from periodicals; from books; from visiting fruit gardens, and by gradually and cautiously working into fruit growing.

The discouragements which many have met with by these frauds have led them to assert that all nurseries are full of errors and impostures. There is no necessity for error. Nurseries may be freed from them as well as a bank from counterfeit bills. The writer can adduce a single case in proof now that he has long since gone out of the business. He supplied a well known pomologist with a thousand trees, of as many different sorts as he had, for home planting. When they all bore, the owner averred that every one proved true to name. They were all propagated from proved sources.

CULTIVATION OF FRUIT.

By T. S. McLELLAN, of Brunswick.

By the politeness of the officers of this Society, I have been requested to prepare an article on fruit culture, to be read at this meeting. I could hardly feel like declining, although I am well aware that there are many members present who are much more capable and better qualified for preparing such an article than myself, but probably very few, if any, have had a longer experience, as I had my little nursery of apple pips in one corner of my father's garden nearly seventy years ago, and since that time have possessed a deep interest in the cultivation of fruit. At that early age I labored under the impression that "like begets like" and carefully saved the seeds of every nice apple, pear, &c., which came into my possession, and planted them in my little nursery; but as my trees grew and yielded fruit, I learned that with apple seeds, as with some other things, the best were liable to produce the most worthless fruit, and out of hundreds of trees raised from the seeds of good fruit not one in five hundred will be worth propagating.

In my youthful days it required but little labor or care to raise apples, cherries or plums. All we had to do was to set out our orchards and the trees took care of themselves, and yielded fruit, such as it was. But few farmers took the trouble to graft their trees, and those who did so procured their scions from some neighbor who possessed a native favorite tree, plastering them up with an unsightly lump of clay, kept in place by some old rags tied on with rope yarn. At the present time the fruit of these scions would be discarded as only fit for cider apples. The only plums raised sixty years ago were sour damsons; and red cherries were considered a luxury. The propagation of good fruit has made great progress within the last half century, although the labor of accomplishing it has vastly increased. Three score years ago the orchardist had but few insect enemies to contend with, and his trees yielded large crops of fruit, with very slight care, while at the present time nothing but the utmost vigilance will protect his trees from destructive insects.

Apples are now selling in our market for one dollar and fifty cents a bushel, while sixty years ago the best could be bought for twenty-five cents a bushel, and cooking apples for twelve and a half cents, and some of our farmers who possessed large orchards, sold their apples at six cents a bushel, the purchasers gathering them from the orchard; while cider sold in our market for one dollar a barrel, the empty barrel to be returned to the seller.

In 1850 and '51 I was station agent on the railroad at our depot. At that time, every spring, thousands of apple, pear and plum trees were brought from New York and Connecticut by the cars, and set out by our farmers. I then came to the conclusion, from the great interest taken in orcharding, and the large number of trees brought into the State, that in a few years the fruit of our orchards would be a drug in the markets, and would hardly pay for the harvesting, but such has not proved to be the fact, as apples now bring a higher price throughout the country than ever before. Why is this so? Do our orchards refuse to yield fruit as in former years?

Among the earliest enemies of our apple trees which we had to contend with were bark lice. If these pests infest a tree badly they absorb the juices which are required for its growth and the perfection of fruit, and the tree is barren of fruit or yields only a few shriveled apples. To destroy these pests a wash of strong soap suds must be applied about the middle of June to every part of the tree infested. Probably some who are present have noticed that

about that season of the year, the limbs of apple trees thus infested are covered with a substance resembling a fine mould, of a cottony appearance. The eggs of the bark lice are deposited in this substance, and can be destroyed by being wiped off with the hand covered by a mitten. As the middle of June is the season of the depositing of the eggs of the aphid, at that time their shell is loose and the alkali applied will penetrate the scale and destroy the insect beneath. But the orchardist has a friend to assist him in the destruction of the bark lice. In the first warm days in spring a small brown bug or beetle known as the lady bug may be seen crawling slowly among the limbs of trees infested with bark lice. These little beetles destroy vast numbers of the bark lice. I have watched them with a small magnifying glass. They proceed from shell to shell, perforating the covering of the bark lice and sucking out the contents. They are about the size of a half of a pea, with two black spots on their wing covers. A few years since on visiting a neighbor I found him in his orchard busily engaged in destroying these little beetles, and told him he was killing his best friends.

Another vexatious pest which the orchardist has to contend with is the apple tree borer, which can only be got rid of after they enter the tree by digging them out with a small chisel or drawing them from their hole with a blunted or hooked wire. Sometimes when the worm cannot be reached without badly lacerating the tree I have inserted one or two lighted matches into the hole, and found that the fumes of the sulphur destroyed them. The borer continues its destructive work for three years after it enters the tree. The eggs from which the worms are hatched are deposited on the bark of the tree very near the surface of the ground, and soon after the eggs are hatched the minute worms may be discovered in the early morning by a small damp spot on the bark caused by the wounding of the bark and flowing of the sap. Before they enter the tree they can be destroyed with slight trouble. But prevention is better than cure, and it is far less trouble to prevent the borers from molesting our trees than it is to dislodge them after they have once entered the body of the tree. I have found that a covering of birch bark or old oil-cloth fastened around the tree, will prevent the eggs from being attached to the bark. The covering should be about a foot in width and inserted an inch beneath the surface of the ground.

The codling moth is another destructive pest the orchardist has to contend with, and one of the most difficult to subdue. It is

estimated that one-half of our apple crop is destroyed every year by the havoc of this insect. I have sometimes wished that not an apple might be raised in the country for one year, so that the moths would all perish for want of sustenance. I have noticed that when we have a good crop of apples for several years in succession, the apples are more wormy each succeeding year. Applying a circle of tar or printer's ink around the trunk of the tree is said to be a partial protection, but I have not seen much benefit from this application. A rope of straw or braided corn husks, fastened around the tree a foot or two from the ground, will afford a place of deposit for their eggs, and this should be often removed and dipped in scalding water or destroyed by fire. I have sprinkled dry ashes or air-slacked lime among the branches of the trees while they were in blossom, but did not find that it was a preventative of wormy apples.

Within a few years another destructive insect or worm has attacked our apples, and I fear it will prove one of the most serious our orchardists will have to contend with. Some five or six years since, I noticed that the earliest sweet apples we received from the south were infested with a minute worm, which had thoroughly perforated the fruit. Three years since, I noticed my earliest sweet apples were similarly affected; and last season all my sweet apples and most of my pleasant tart apples, such as the Haley, Hurlbut, Nodhead, Primate and Porter, were more or less infested with this new enemy. These apples appear perfectly sound on the outside, with no signs of the entrance or exit of worms through the skin of the apple, but on cutting them open they are found worthless, being thoroughly perforated in every direction by a very minute worm. I had supposed that this new enemy of our fruit might be confined to this immediate vicinity, but a friend residing in the northern part of Somerset county, informs me that the apples in that locality were similarly affected the past season. If some of our entomologists can discover a remedy for this new enemy of our apples, they will merit and receive the grateful thanks of all who are engaged in the propagation of this excellent fruit. [See remarks of Mr. Gilbert on this subject, hereafter. *Sec.*]

Another enemy of our apple trees, which in former years we had to contend with, has nearly ceased its depredations in the orchards in this vicinity. I refer to the tent caterpillar—although I often

notice their tents in the spring on the wild cherry trees in the forests, they do but slight damage to our orchard trees.

From experience, I am decidedly of the opinion that the safest location for an orchard, to be protected from the winter killing of trees, is a northern exposure, or on land sloping to the north,—that it is not so much the extreme cold weather which kills our fruit trees, as the frequent thawing of the sap of the tree after it has been frozen.

In the cold winter of 1857, when the thermometer went down to 40° below zero, and many of the apple trees in Maine perished or were seriously injured, I had a young orchard located on the north side of a hill, where it seldom thaws in the winter, and did not lose a tree, while nearly all the apple trees in this vicinity, exposed to the winter sun, perished. Even the Baldwin did not winter kill in my orchard, and a few peach trees survived, though I have read that a temperature of 22° below zero is fatal to the peach. In fact, I have never had a tree injured by the cold in my orchard which slopes to the north.

The secret of success in grafting, is to be careful and have the inner bark of the stock and scion meet, and great care in waxing the wounded parts, so as to exclude the air. Waxing the upper end of the scion prevents its drying, which is very liable to occur if a drying northwest wind follows grafting.

In the immediate vicinity of our village there is an extensive tract of land of a light sandy nature, which is quite unfitted for the raising of fruit, except blueberries, and we only succeed in raising apples and other fruit by heavily enriching the ground on which our fruit trees are set. A friend who has expended much time and money in cultivating an orchard on this land was asked at our village Farmer's Club a few years since: "What success he met with in raising fruit on plains land." He replied that he thought "he should meet with fair success, but it was very difficult to harvest much fruit from an orchard located in the vicinity of an orthodox college, where one-half of the students were preparing for the ministry."

ORCHARDING IN FRANKLIN COUNTY.

By S. R. LELAND, of Farmington.

That the influence of the Maine State Pomological Society is giving a great impetus to fruit raising in all parts of our State, there are abundant indications. In travelling over Franklin county I see unmistakable signs of a very marked improvement in fruit growing in the last ten years, not only in the extra care bestowed on old orchards but also in the large area being planted to young trees. This is in part attributable to the enlarged markets, and in part to the influence of the Pomological Society. Although there are but few members of the Society in this county, its transactions are read by the firesides of most of the orchardists, and its wise suggestions and recommendations are silently working a mighty influence for good.

There is no mistake but that there is a great improvement being made in the *profits* of apple raising in this county. One important step in the right direction is the planting of more native or Maine grown trees and less of the New York and Connecticut stock. The early orchardists in this vicinity most unfortunately grafted much too largely of early varieties for which there is no market. And another important step in the right direction is the re-grafting of trees bearing early fruit to such varieties of late-keeping apples as have an established market notoriety.

At no time in the history of orcharding in this county has there been so many and such flattering inducements to increased effort in the production of good varieties of apples as now, both by bestowing better care on our trees and increasing their numbers. The pioneer orchardists of this county had comparatively no market for their fruit. A few barrels of eating and cooking apples could be sold in the villages, and the wives, sons and daughters dried a few, but the larger part were made into cider or fed to stock at a very small profit. But now, how changed! It is safe to predict that in the future there will be an unsatiable market for all the good apples that can be produced.

The shipment of Maine apples to foreign countries is a business evidently in its infancy, and that the foreign demand for shipping varieties of Maine apples will increase there is no doubt. The drying of apples by the steam evaporating process is a new industry and a growing one, and one that will call for thousands of bushels of second quality apples annually in this county, and it is a busi-

ness which we can hardly imagine can be overdone, as the products have the whole world for a market. In addition to the above calls for our apples, thousands of bushels are used at our canning factories annually, and there is no good reason why that business will not continue if the apples can be procured. In view of all those facilities for marketing our fruit, is there not great encouragement for farmers to engage more extensively and more perseveringly in the production of apples?

There is an abundance of land upon the hill-sides in this county peculiarly adapted to the late-keeping varieties of apples, and particularly the Baldwins, to enable us to increase the area of orcharding to almost an unlimited extent.

During our county fair, last autumn, I was in the Secretary's office one day when a farmer of this town brought in a bushel of Baldwins to be entered for a premium, and it was decidedly the handsomest and best basket of Baldwins on exhibition. As the Secretary handed him the tag he noticed the apples and made the remark "I suppose those grew upon trees in your garden, that are highly cultivated?" The answer was "No, they grew upon trees on a side-hill, half a mile from my garden, where the stones are so thick you can hardly see the ground, and they receive no cultivation." Is there not a hint here worth heeding? There are hundreds of acres of just such land in this county, too stony to cultivate and not worth fencing for what feed it will produce as pasturing, which, if planted to apple trees and given proper care while young, would in a few years take care of themselves and yield a large profit on the investment.

Any farmer having a spot of high land sufficiently steep for natural drainage, and "chock full" of either granite or schistous rocks, has *the* place to grow apples at a profit. If I were to set trees upon such land I should set native seedlings and graft them in the branches when large enough, largely to Baldwins. The year they were planted, I should mulch with coarse manure, and perhaps also the second year. Afterwards, for a few years, mulch with any vegetable matter, and when they had got their roots well in among the rocks should risk them to take care of themselves, and I have no doubt they would do it, for there is that quality in such land that exactly suits the apple tree, particularly the Baldwin, and they have a way of appropriating it.

There is a great deal said and written on the "Northern limits of the Baldwin," and some writers say the southern limits of Maine is the northern limits at which it is safe to grow it, but here in the central part of the State it is doing wonderfully well. I commenced setting trees fourteen years ago, and have set some every year, and grafted as fast as they became large enough. I have grafted to Baldwins, Rhode Island Greenings, Roxbury Russets and Talman's Sweet, but more largely to Baldwins than any other variety, and thus far the Baldwin has proved as hardy as any of them and more so than the Russet.

I have no doubt that in time other varieties may be produced that will be equal to the Baldwin for all purposes, and perhaps take the lead as market apples, but I predict that it will be so far in the future that I am content to acknowledge the Baldwin as the King of apples for the present, and should advise Franklin county orchardists to be shy of new varieties urged upon them by agents, until their merits are well known and their reputation thoroughly established in the market.

The raising of pears has not yet proved profitable in this county. The trees seem to make a good growth and stand the winters as well as the apple trees, but they fail to produce good crops of fruit. A well loaded pear tree is rarely seen. There are a few small pear orchards in the county and almost all the farmers and many of the village residents have a few trees. These are nearly all trees purchased of tree agents and of course grafted at the ground when small, which may be the reason why they fail to produce. If we would raise our trees from the seed and graft them, when large enough, to such varieties as we liked, perhaps they would produce better — an experiment I am trying, but my trees are not old enough yet to report with what success. I am informed that pear trees near the sea coast produce well and perhaps the application of salt to our trees here might cause them to fruit better.

While I by no means recommend the cultivation of grapes as a source of profit here, I *do* recommend to every person who has a spot of land large enough, to rear a few vines of the early varieties as a source of health and enjoyment.

GROWING APPLES FOR PROFIT.

By D. J. BRIGGS, of Turner.

In order to produce the best results, it will be necessary to begin at the foundation. Seed should be selected with care. Who would think of producing a good crop of corn or grain from imperfect seed? The formation of a large tree from a minute seed is one of the most interesting and wonderful occurrence in nature. It is important that the fruit culturist should so understand the process as to know what will hasten it on one hand or retard it on the other. By understanding these principles the necessary rules will be greatly simplified and directions rendered more clear and obvious.

The first movement of the seed towards forming a new plant is *germination*. After the plant is formed and its growth is carried on through the agency of its leaves, the process is *vegetation*. To produce germination, seeds require heat, moisture and air, but not light. As a general rule seeds germinate and grow most readily when buried to a depth of from three to five times their diameter, in soil of ordinary moisture. The germination of apple seeds and some others will be hastened by subjecting them to freezing and thawing, to admit air and moisture.

The great cause of failure in growing trees in the nursery is in the preparation of the soil. Let it be remembered that the soil for a nursery should be as good and well worked as that of a well cultivated kitchen garden. Young trees must be well guarded against the depredations of cattle, as all farm stock are fond of the young shoots of fruit trees. After the trees have been started and well cared for in the nursery until they are of proper size for transplanting, say three or four years old, they should be carefully lifted and planted in orchard rows. In taking up trees, care should be used in preserving as many of the fibrous roots as possible.

Good soils vary in many particulars, but as a general rule one which is dry, firm, mellow and fertile is well suited to the purpose of growing apples. It should be deep, to allow the extension of the roots; quite dry or else well drained, to prevent injury from stagnant water below the surface. I would prefer a gentle inclination to the westward as a site for an orchard. Before setting the trees the soil should be well and deeply tilled, and few soils exist in this part of the country which would not be much benefited for all

hardy fruits, such as the apple, by enriching. Nothing for general use is equal to stable manure for the basis. The same composted with peat, muck or turf, with a mixture of ashes and bone meal will be found to give uniform and satisfactory results. After the soil is prepared as above, stake the ground in rows forty feet apart each way, then one in the center of every square, being careful to make the rows as straight as possible. Make an excavation where every stake stands, in the fall, if possible, from one and one-half to two and one-half feet deep, according to circumstances, and three or four feet in diameter. In early spring, after the trees have been carefully lifted in the nursery as recommended, set in straight lines about as deep as when standing in the nursery, having one person to hold the trees nearly upright (inclining a little to the westward, if anything, and another to straighten the fibrous roots in natural position, and at the same time filling in with fine soil, gently pressing it at the top. It is well to fasten the trees, after the planting is completed, to stakes, for a year or two, until the roots get a good hold of the soil. It is well, also, to make use of some kind of mulching, to prevent the too free evaporation of moisture.

I have pointed out what I believe to be the proper course to pursue, as far as it goes, to insure success. The old maxim is, "Whatever is worth doing at all is worth doing well." Probably no truer words were ever uttered.

Of the thousands of trees which are every year planted out in all parts of the country, it is safe to say that more are lost from neglected after-culture than from all other causes together. Some destroy their trees by crowding the roots into small holes cut out of a sod, where, if they live, they have but a stunted and feeble existence, like the half-starved cattle of a neglectful farmer; others set them out well, and then consider their labors ended. They use no dressing of any kind, and suffer them to be choked with grass and weeds. I say again, give young trees a good mulching and keep the grass and weeds out after planting. In winter it excludes frost, and in summer it prevents the evaporation of moisture and the effects of drouth.

WHEN TO MANURE AN ORCHARD.

The answer must be according to circumstances. The examination or analysis of the soil will be of little use, but the trees will tell their own story. If the soil is so rich that they make annual shoots

of two or more feet in length without any manuring at all, which, however, is rarely the case, then it will be needless to give heed in that direction. The annual growth is the best guide to treatment.

There are but few apple orchards which, after reaching a good bearing state, throw out annual shoots more than a foot or a foot and a half long, and many not half this length. The owner of apple trees may lay it down as a rule, that when his trees do not grow one foot, or nearly that, annually, they need more manuring. By observation he can answer all questions of this kind without difficulty.

Ashes, leached or unleached, are of great value to an orchard. Autumn or early winter is a good time to manure an orchard. Spread the manure over as much ground as the top covers, and do not be afraid of putting on too much. A heavily bearing tree, or one which it is desired to make productive of good fruit, must have some food to produce it from; and a young tree needs looking after as much as a hill of corn, and should have in proportion to its size about the same manuring; and there is no crop that will pay better for care and manuring than good, thrifty apple trees of the right varieties.

PRUNING.

As to the best time of year to prune an orchard, much has been said and written, and considerable difference of opinion and practice prevails. According to my observation, I think that it can be most successfully and properly done when the trees are free both from fruit and leaves; and all things considered, perhaps no time is better adapted to this important work than early spring, after the frost is entirely out of the limbs. There is a tendency to over-prune many times, especially those just commencing to bear fruit. There is no practice that needs reform more than this one. There is no quicker way of spoiling trees than by injudicious pruning. In pruning fruit trees, do not make a cut till you think what it is for and what will be the effect. When I first commenced the care of apple trees, I thought that there must be *some trimming* done; so I went at it and pruned eight or ten trees that had been set about thirty years. It was done, as I thought, in good shape. The consequence was, two of the most thrifty ones died outright, and they are all dead now but one. Trimming should be reduced to a system. By beginning when the trees are young, and annually going over the orchard, cutting out all suckers and crowded

branches, one will avoid the necessity of cutting off large limbs in after years,—a practice that should always be avoided if possible; but if there should be any such overlooked and grow to be an inch or more in diameter, make a smooth cut and apply gum shellac prepared in alcohol, with a brush, and when once hardened, heat or moisture will not affect it.

GRAFTING.

The proper time to graft is in the spring, as soon as the season is warm enough to put the sap in motion. The best time is when April showers are prevalent, and it may be continued until June, but the scions had better be cut previous to this. They may be cut in autumn and stored in a dry, cool cellar, with the ends in sand or dry soil. For scions, cut the the thrifty wood of the last season's growth from bearing limbs. I prefer shoots near the top or center of the head of an old and thrifty tree. It is easy for any one to learn to graft. Grafting is the true way of propagating almost all choice fruits. There are many formulas for making grafting wax, which can be readily procured.

VARIETIES.

What varieties of apples shall we cultivate? is a question of importance. It is a well known fact that some kinds will succeed admirably in one place and utterly fail in others. Probably the best plan to adopt in making a selection for an orchard is to examine carefully what sorts succeed best in the vicinity where we wish to plant an orchard, and select a very few of the most productive and best selling varieties. Furthermore, the farmer who neglects to provide for himself and his family a succession of choice apples, commencing with July and continuing until the next July, each variety crowding upon the others with no interval of dearth, neglects the privilege of his birthright, and no wonder that his children desert the old farm with no feeling of regret, for it is to them a scene of privation rather than of enjoyment. They share the hard work and have none of the rewards which skillful industry should bestow.

It hardly admits of discussion that habits of observation are of practical assistance, are indeed a necessity in all the industrial pursuits of life; and this is especially true of fruit growing. The fruit grower has to deal with climate, soil, location, markets, insects and

other enemies; and to be successful, he needs all the practical knowledge possible, and he can attain it only through habits of observation. It is easier to acquire habits of carelessness, habits of running by and overlooking facts without any investigation. Perhaps too few of us really have fixed habits of observation. Such a habit is worth our time, and it seems to me that fruit growing affords better facilities for acquiring it than any other pursuit. If we spend much of our time in the orchard, we can not help being observant of the changes taking place day by day and year by year. The insect enemies—and their name is legion,—have to be watched and their ravages guarded against. Each new enemy as it comes, has some new way of doing its work, and must be watched, its habits noted, and means devised to prevent its ravages.

The fruit grower has friends, also, as well as enemies, among the insects and the feathered tribes, and it needs the closest observation sometimes, to judge between friend and foe. There are also many mysteries connected with the diseases of fruit trees, which intelligent, close and long-continued observation alone can solve.

The climate and soil of a large part of our State afford unequalled facilities for the cultivation of fruit, to make it a source of income unequalled by any other industrial pursuit on the farm.

FRUIT GROWING IN PISCATAQUIS COUNTY.

By H. L. LELAND, of Sangerville.

The present and future outlook of fruit growing in Piscataquis county is as a whole encouraging. Our upland soils are well adapted to orcharding, and the climatic conditions do not essentially differ from those in counties south of us.

The greatest obstacles to progress in growing fruit come through the lack of interest and want of intelligent and systematic effort on the part of our farmers. In the past there has been no call for apples outside of our local demands, hence there has been no inducement to encourage increased culture. Within a few years there has been a demand for good apples for shipment. This demand is awakening increased interest and will lead to more study, intelligence and care in the selection of trees and varieties. In the early settlements of the county, beginning in 1805, and down to 1830, nearly every farmer planted out orchards, many of them of large

extent; these trees were grown upon the farms where planted or in the near vicinity, and in the virgin soil grew healthy and thrifty, coming early into bearing and producing abundant crops. Later, a portion of these trees were grafted, but the work not being well done, the operator usually standing upon the ground and grafting such limbs as were within his reach, leaving the most thrifty part of the tree unchanged, together with the selection of varieties (largely Baldwins) not adapted to the climate, the results were not satisfactory nor profitable and did much to discourage future efforts in the growing of improved fruit. As I have said, the average farmer has given but little thought or attention to orcharding and this neglect and ignorance has given the irrepressible and irresponsible western tree agent a fruitful field for operation.

From experience and observation I feel safe in making the statement that the trees that have been sent into this county through the orders given to tree agents have been entirely unsuited to our conditions and have proven as a rule complete failures. Among those earliest brought in I doubt if one out of fifty lived to produce fruit. Later, orders given under the assurance of obtaining "iron clads," producing fruit far superior to the old well known varieties, have lived better, but what has the farmer got for the money paid out, paying seventy-five cents and \$1.00 for each tree? A lot of crab trees worse than useless, "Ben Davis," "Hass," "Mann," and "Chase's Golden"; the last extolled as one of the most valuable varieties, it being nothing better however than a seedling originating in this county with no merit whatever to recommend it. There may be locations where these "iron clads" are needed because more valuable varieties can not be grown; but decidedly we have no use for them in Piscataquis county, and the sooner our farmers learn the fact the better it will be for the fruit growing interests and the pockets of our people.

There have been among us frequent attempts at growing nursery stock, and although these efforts have not generally been profitable pecuniarily, yet out of these nurseries of well grown trees we have obtained our best orchards. I think our farmers are learning this truth. If they had learned it sooner it would have saved them a good many hard earned dollars, beside all the disappointments and delays that have come through the purchase of western trees.

To sum up, as I propose to make this paper brief, my experience and observation teaches me that our reliance for successful fruit grow-

ing must come first through well grown home-grown trees ; second, the best orchards, at least of most varieties, are those planted out as seedlings and grafted in the limbs ; third, our most profitable varieties are those well known in the market, with perhaps the exception of the Baldwin, which is not fully reliable and does not mature so as to possess that excellence of quality that it does in more favored localities. We are growing extensively the Rolfe, a seedling originated in Guilford, which is superior to anything we grow in its season, late fall and early winter. This variety is becoming disseminated and is giving complete satisfaction.

Accompanying the paper of Mr. Leland, was an interesting letter from Calvin Chamberlain, Esq., of Foxcroft, relating to the history of fruit culture in the State, and especially in Piscataquis county, and forming a valuable contribution to that department ; which will appear subsequently.

STUDIES ON THE CODLING MOTH.

By CHARLES G. ATKINS, of Bucksport.

In the summer of 1882, I passed the most of the time between July and October upon my farm in Manchester and Readfield, and was able to make some original observations on the habits of the codling moth. They were far from complete, being in fact but the first steps in a series of studies which I proposed to make on this insect, and which I do not despair of being able to carry out some day, though the opportunity is for the present denied me. Yet, fragmentary as my notes are, I venture to present them to the Society, with the hope that they may incite some one else to pursue the same object in a systematic way.

I am a devout believer in *system* in all studies, as I am a believer in the *study* of all important topics. I have no faith in guess-work, and am skeptical toward all theories deduced from observations conducted by the *rule of thumb*. When, therefore I wish to know how an apple worm enters an apple and how he proceeds after entering, I consider it much better to examine a lot of wormy apples, without

and within, than to sit down to my writing table and guess at it. So when I set out to study the codling moth I determined to use my eyes diligently, record what I saw, and defer theories till I had some basis of facts on which to form them.

To ascertain facts relating to the deposition of eggs and the career of the worm while in the apple I took pains to examine critically two hundred and one wormy apples taken at sundry times from the trees or from the ground, and note in the case of each one how many worms had entered it, whether from the blossom end or side, how many still remained, to what extent they had mutilated the specimen, and some other items. From the record of these observations I am able to draw some conclusions which will be presented presently. As an example I will give the results of my observations on thirty-seven wormy apples, mostly Baldwins, July 22. I found that 34 of them (= 92 per cent) had been entered by worms from the blossom end (calyx) only, 3 (= 8 per cent) from the side only; 14 of them (= 38 per cent) had each one hole in the side; 3 (= 8 per cent) had each two holes in the side, one had three holes in the side, and the remaining 19 (= 51 per cent) were free from any worm holes except those made by the worm entering through the calyx; 31 of the specimens (= 84 per cent) contained each a single excavation, indicating that but a single worm had entered each one, four of them had each two excavations and two had three excavations each, the whole indicating that forty-five worms had been at work in these thirty-seven apples. Twenty-five worms in all were found still in the fruit, eighteen of the apples containing one worm each, two containing two worms each, and a single specimen containing three worms, thus it appears that twenty worms had already crawled out of these apples or had died within, without leaving any noticeable remains. Fifteen of the apples had been abandoned by the worms, five of them being slightly mutilated, seven much and three very much mutilated. In this way all the examinations were made.

Being personally unacquainted with the subject of my studies in any but the worm stage, I took measures to obtain an introduction to the winged form by imprisoning some well grown worms and awaiting their transformation. In this I was quite successful, and reared a large number of moths. I also dabbled some with reme lies, but am sorry that I cannot form any certain conclusions as to their efficacy.

When are the eggs laid? On this point I cannot be so definite as I would like. On July 8th, I took twenty-three apples at random from a sweet tree, cut them open and found but two worms and one empty worm hole. July 19th, I tried twenty specimens from the same tree with similar result, but on other parts of the farm found the worms more plenty, some of them had opened holes in the side of the apple but still remained within, and the largest I found that day was half an inch long. So far as this goes it indicates that the earliest eggs—and what I have observed of the date when the moths begin to fly in the summer leads to the same conclusion—are not laid before the last of June; but this point needs further study. How late in the season the moths continue to lay eggs I can only judge from the fact that very small worms continued to be found up to the last examination, September 3d. August 3d, out of twenty-nine worms found, twelve were less than a quarter of an inch long and five of them less than three-sixteenths of an inch, two being found in the eye of the apple, the pulp of which they had not yet penetrated. August 7th, out of twenty-eight worms twelve were less than a quarter of an inch long, and on the third of September four out of fourteen were equally small.

On what part of the apple is the egg laid? In the great majority of cases in the calyx or the remains of the blossom. This is proved by the fact that sixty-eight per cent of the wormy apples had been entered from the calyx exclusively and a further percentage of twenty-three and one-half had been entered from both the calyx and the side, while but eight and one-half per cent had been entered exclusively from the side. It appears that as the season advances the proportion of newly hatched worms entering from the side increases, but five per cent of the apples being in that class July 22, while in August the percentage of such apples was, in different lots, from eleven to twenty-two per cent.

The worm appears generally to complete its larval growth in the apple where its existence begins, but seven instances being observed where one had changed from one apple to another, and all of these may have been instances where the two apples touched each other and the worm passed from one to the other without exposure or consciousness of change.

How many worms enter a single apple? Out of 201 specimens, 9 ($= 4\frac{1}{2}$ per cent) had been penetrated by three worms each, 47 ($= 23\frac{1}{2}$ per cent) by two worms each, and 148 ($= 74$ per cent) by

one each. In no case did a worm know through into the burrow of another.

When does the worm leave the apple? July 22, out of 59 apples 27 had been deserted by the worms, which had doubtless completed their growth and gone out to form their cocoons. These samples were Baldwins and Nodheads in about equal proportions, but I regret that my notes do not allow me to say whether they were taken directly from the trees or picked from the ground. We may say then that the worms begin to leave the apple before July 22. On the 29th I found cocoons already formed by worms that came from apples gathered on the 24th.

Does the worm leave the apple before or after it falls from the tree? In 8 cases out of 32, August 3d, the worm had left the apples that still hung on the tree. The same was true in 11 cases out of 38, August 7, and so on. In order to determine how many apples that drop contain worms at the time of dropping requires some close observations that I have not made. As to apples that have been accumulating on the ground, I have some notes. September 3, I examined fifteen or twenty such apples and found a worm in about one out of five or six. Similar results were obtained at other dates.

The Cocoons. To aid in the study of the habits of the worm from the time of leaving the fruit, several expedients were adopted. Apples supposed to contain worms were placed in covered pasteboard boxes, along with bits of paper. The full grown larvæ crawled out from the apples and formed cocoons under the paper and in the corners of the boxes. These were examined daily and as soon as each cocoon was formed the date was affixed to the paper or the box alongside. These were afterwards separated by cutting the boxes up, when each cocoon could be placed in a box or vial by itself. Some two bushels of wormy apples gathered the first week in August were placed in half barrels which were covered over with many thicknesses of old newspapers with a stout cloth outside, all securely tied down so that no worms could crawl out. The cover was several times removed and the worms that had crawled up and made their cocoons around the chink or in the folds of paper were destroyed or transferred to small boxes for further experiment.

One of the first things learned was the existence of a strong instinct in the worms in the barrels to crawl upward as soon as they had left the apples. The most enticing traps were set for them, resting on the top of the fruit, but not a worm could be induced to

enter. They insisted on climbing the sides of the barrel to the highest point. If the cover was left off they would reach the ends of the staves and then travel round and round the rim in vain endeavor to find something leading still higher. This may be taken as indicating the correctness of the theory that the worms that fall to the ground immediately seek to climb the trunks of the trees. Many cocoons were found between the papers composing the covers, but a larger number in the corner between the staves and cover and in the groove which receives the barrel-head, and not a few worms had excavated for themselves neat cells entirely within the substance of the pine staves, lining them with the soft material obtained from the excavation and with the silk that they spin for the purpose.

In the pasteboard boxes I placed many loose bits of paper and fine paper cells carefully formed on the end of a penstock, hoping that the cocoon might be formed within them and thus be readily removed, but though a good many accepted this invitation, the majority evidently thought these loose bits too unstable and preferred to make the box itself the basis of their hiding places, either under a bit of paper or in the corners or on the bare sides, where they partially burrowed in the pasteboard. In like manner, also, in the case of paper bands around the trunks of trees, no instance was observed of a cocoon being formed between the thicknesses of paper, but in all cases they were beneath all the folds, next to the bark, and had often burrowed slightly into the bark.

In transferring the worms from one box to another and examining them they were very generally torn from the cocoons and obliged to form new ones, which they readily did. Some of these were torn out a second time and not one of these failed to make the third cocoon, and this extra labor did not appear to exhaust them in the least, such specimens completing their transformations equally well with the others.

How many broods in a season? I expected to find the worms that went into cocoon early in August rapidly developing; but, though quite a number were opened during the succeeding weeks, not one was found to have changed perceptibly. It seemed for a while an inevitable conclusion that none of the worms would transform the same season and that therefore we had but one brood in a season. In September a very few moths were discovered to have come out from the August cocoons, but whether they were early enough to

give rise to a new brood of worms I have no data to determine, but as the vast majority of the worms remained unchanged until spring it appears that practically there is but one brood. That is to say, if, indeed, there be a second brood, it is so small in number and begins life so late in the season that its operations are of little moment to the orchardist.

Wintering over. I had three separate lots of worms. The first consisted of those that I had been closely examining, which were kept in a warm room in the farm-house until mid-October, when the house was shut up for the winter, and the cocoons left there until spring. About the first of May I carried twenty of these to Bucksport and kept them in a warm room until they transformed. I suppose that the artificial heat to which they had been subjected would hasten their development so much as to bring them through their transformations before the time of apple blooming. It was therefore a great surprise to find, May 28, that of eight of these worms that day taken from their cocoons, only two had begun their transformation and reached the "pupa stage," the other six crawling about in a lively way and afterwards constructing new cocoons for themselves. It was not until June 16 that the first moth emerged from any of the cocoons, and the remainder continued to emerge until July 15 or 20.

The second lot received the same treatment as the first except that it was not brought into the warm room in Bucksport till June. These were all examined June 18 by opening the cocoons enough to see the condition of their inmates. Out of fifty specimens, all but three or four had reached the pupa stage and could no longer crawl about. They were but little disturbed and most of them transformed finally in July, one of them coming out as late as July 27. Two specimens found in larva state June 18, made new cocoons and completed their transformation between the 10th and 12th of July; they had originally gone into cocoon between August 9 and 12.

The worms belonging to these two lots made their original cocoons between August 7th and 12th, and completed their transformation between June 16th and July 31st, notwithstanding their subjection to artificial heat in the fall and spring. Their period of transformation thus averaged about eleven months. The most of them had been obliged to form one or two extra cocoons, which may have retarded their development somewhat, perhaps enough to counter-

balance the accelerating influence of the artificial heat to which they were subjected. But this is surmise.

The third lot consisted of worms that emerged from the apples enclosed the first week in August in a covered half barrel before referred to, and allowed to lie undisturbed in their original cocoons through the winter in a cold shed. The cover was removed June 1st. There were found the remains of a very few dead moths that must have completed their transformation in the fall, but of thirty worms then torn from the cocoons every one was still an active larva with the exception of two very small pupæ. June 18th, the rest of these cocoons were examined and found to contain active larvæ. The first of these emerged in moth form July 13th, and the last observed was as late as August 6th.

Until some specimen can be carried through their entire transformation without being compelled to build new cocoons or exposed to any unnatural conditions it will be impossible to state accurately the natural duration of the cocoon stage, but I feel warranted in saying that it lasts in the great majority of cases from August to at least the last of the following June. In all, I succeeded in bringing out about fifty perfect codling moths, the first, with two exceptions, that I had ever seen, and the first that I had ever recognized. It is a neat little grayish moth with bright coppery spots on its wings, by which it will generally be recognized.

Remedies. As before intimated, I have merely dabbled in this part of the subject. I have had all the wormy apples picked up several times in a season and either sent out of the neighborhood or buried, finding the latter method of disposing of them too laborious, and as to the former, not reaping much satisfaction from the reflection that I had got rid of the pest at some risk to the man who took them to feed his pigs. In 1882, all the wormy apples that could be found were picked from the trees twice during August; and I am inclined to try that again, though it did not free me from the pest, and I have not the data to tell whether it had any appreciable effect. In 1882, and again in 1883, paper bandages were applied to all the bearing trees and many moths thus trapped. I shall surely continue this. Until better informed, I shall not take pains to apply the bandages before July 15, unless to avoid a pressure of business during haying time; may possibly examine them about August 10 or 15, to catch any early worms that might form a second brood, and shall be in no hurry to look at them again till some convenient

date after the close of the apple harvest. Old newspapers are good. They should fit the trunk snug, and the more of them on a tree the more effective, I presume. Pasturing with sheep I have not tried, but doubt its efficiency, unless the trees be banded also, because so many of the worms leave the apples before they fall. Catching the moths in jars of sweetened water I have tried, and taken many other kinds but never a codling moth. Those people who think they have captured it in this way are without doubt mistaken; they have taken some other kind. Spraying with poisoned water I have not tried, but if really as effective as is claimed, I see no reason why it should not supersede all the other methods. The date when it should be applied is an important point, which needs some study. I should not suppose it would be worth while to apply it immediately after blossoming time, for there is good reason to believe that no eggs are laid until three or four weeks later. As the moths continue to lay eggs until the last of the summer, it would appear that one application would not be sufficient.

But I find that I am running into theory on insufficient data of fact, and will bring this paper to a close with an earnest entreaty to the members of the society to take up the subject and experiment without ceasing until we discover some mode of controlling this most serious of our orchard pests.

DISCUSSION OF THE FOREGOING PAPERS.

INSECTS.

Mr. GILBERT, being called upon, said with respect to the *apple maggot*, alluded to in the paper of Mr. McLellan:

I would like to give some comfort on this subject, but I know of nothing comforting in the situation. It is comparatively a new enemy, and yet apparently a serious one. The maggot is exceedingly small, very seldom to be seen by the naked eye, except by the most careful examination; working secretly, out of sight under the skin of the apple, through the pulp, and entirely unfitting it for any use whatever. It was first discovered in the central or Middle States, and has gradually spread until it is now found all over the country. At a recent meeting of the Connecticut State Board of Agriculture, a member of the Board, Mr. P. Mayne, stated that the apples of that section, especially the *sweet* apples of early autumn,

were being very seriously injured from its effects. It also appears to a limited extent in the winter sweet fruits, and now appears in some cases in the richer of the tart fruits, like the Benoni and some others. Whether they will multiply and extend through all kinds of fruit no one knows; neither has there been a remedy suggested. Some of our scientific investigators are studying its habits, and possibly in time there may be some method devised by which its ravages may be prevented. It is not a very comforting fact that the labors of man are to be defeated and set at naught by an infinitesimal insect, almost out of the reach of the human eye; that with all our knowledge and our power we are at the mercy, to a great extent, of many of these little enemies. It is not a high compliment to our wisdom, but such is the fact. There is one other point in this paper which I wish to refer to, and that is the old subject,—the *borer*.

The idea of brimstone, as connected with the borer, is new to me. It is another application and suggestion of the efficacy of that material where serious sin exists; and certainly the sinful work of this borer is a thing that deserves brimstone or some other effectual application. Trees are often badly lacerated in the destruction of the borer. I have learned that after the borer has been allowed to work its way for two years in a tree, having entered to a considerable depth, its destruction requires deep cutting and causes serious injury to the tree. The borer at that stage, let alone, will work less injury than you will in your efforts to destroy it with the mallet and chisel. When I find the borer has gone beyond the reach of my jack-knife, I let him alone. Sometimes I can reach them with a wire. The injury has been accomplished then and he is simply working up through the wood to the proper height where he is to emerge next spring. The damage comes largely from his working near the surface of the wood; between that and the bark, or in the bark, thus cutting off the supply of sap. He cuts off no supply of sap when working on the interior of the tree and you will work more destruction with the mallet and chisel than he will. With respect to the application of bands for protection; I have not secured protection in that way. I have found it was an invitation, in fact, for the deposit of the eggs. The insect depositing eggs, seeks and likes a slight shelter, hence you find more of the eggs deposited where there is grass and weeds growing around the tree. A band is just the protection and shelter that they seek for, and if nothing else

shelters the tree they will, if there is a chance, secrete themselves partially behind or under this band and there deposit their eggs : and the only time I ever found the borer at work up in the stalk of the tree, above the ground, for any distance, was where I have wrapped matting around the tree. I have invariably found borers up through the stalk of the tree, secreted behind this band. It is an invitation to the insect ; it furnishes the shelter which it seeks.

MR. GARDINER. In the few words which I read in the beginning upon protecting trees against mice in winter, with pieces of pipe, I ought to have added, that I found one year that when I had left the pieces of pipe around the tree all summer, I almost invariably found borers under that tin pipe. Since that I go after the snow is gone and pull them off and lay them at the foot of the tree until the next autumn, because I find a tendency to borers where the pipe remains on all summer.

MR. ATHERTON. The damage which the borer does in the first two years of its existence is principally on the outer and inner bark. If he enters the heart of the tree, or as he ascends previous to his emergence from the tree, I would advise in all cases, *never to let him alone*. It has been an invariable rule with me, when I fail to reach the borer with my knife, to reach and destroy them with a wire. I always carry two or three pieces, so if I break one I can have another. I never fail to reach the borer. I can generally, by running the wire up, catch it in its body and bring it down ; but if it is from eight to ten inches, or six inches even, it is too far to bring it down ; but you will have indications at the end of the wire that you have killed it. I never fail to reach and destroy them. I do it whether the tree is large or small. When the borer ascends he makes a round hole in the heart of the tree. If there is more than one, they will make several of these holes. If the tree is small, they weaken it ; therefore my advice is, not to let him alone ; pursue him to his destruction, it can be done with a flexible wire.

L. H. BLOSSOM, of Turner, recommended the application of the fumes of brimstone, forced into the cavity made by the borer, by means of a bellows, and described an apparatus to be affixed to the bellows for that purpose. He said he had used it successfully. He would never leave a borer alive in a tree, but thought too much cutting injurious. Had seen trees very much injured by excessive cutting.

MR. GARDINER alluded to the absolute practice of boring a hole in the trunk of the tree and filling it with sulphur as a means of preventing the ravages of insects. He had tried it years ago and found it useless.

MR. LAPHAM, of Pittston, concurred in the opinion last expressed, and said he had found the knife and wire to be the only reliable means for destroying the borer.

MR. HAMMOND recommended pasturing sheep in the orchard, and said that in five years since adopting that practice he had very little trouble from borers or insects of any kind.

MR. POPE, of Manchester, and MR. BRIGGS, of Turner, speaking from their own experience in pasturing with sheep for many years, found no diminution in the number of borers from that practice.

C. J. GILMAN, of Brunswick. The matter of pruning of fruit trees seems to have been overlooked in this discussion thus far. If there is any fault in the orchards in the State of Maine, I think it is in the abundance, or super-abundance of wood in the tree. A gentleman who is now present has a splendid orchard in this town, and although it is in proximity to that institution which my friend McLellan alluded to, I hope it will survive the ordeal. I have been constantly saying to him, as the result of my observation and practice, that now is the time for him to begin to trim his orchard. An apple tree, or the fruit upon it, requires the sun, as much as corn, wheat or potatoes, for proper development, in order to arrive at the best results. On examination, one-half of the Baldwin apples that we find in our markets in New England are simply *shaded*; it is of a *green* color; it has not had the sun, and the fruit does not command the highest price in the market; the quality is inferior. Therefore I say that this subject of the trimming of our orchards is important. The process should commence a year or two after the tree is set out to save large gashes in cutting out limbs in the after life of the tree. I have been told that my process was severe, that I was taking out too much wood. I cut some limbs two or three or four inches in diameter and the result has been that while it was a severe operation to the orchard, the fruit has greatly improved. Then again, I have still further to suggest that where an orchard is taken in season and treated in this manner, the fruit is larger and more perfect, and is more easily harvested.

With respect to another point suggested by the President in his very interesting paper, as to the mode of packing fruit. Now I

take it that most of our fruit growers have reached that; there are gentlemen in this house who need no instruction as to the mode of packing fruit, but the process that has obtained among the best orchardists that I know of in New England, is, in the first place to pick the fruit from the tree by the human hand, and then put the stem downward in the bottom of the barrel, in other words, "face the barrel" as fruit packers term it, then to fill the barrel about half full, then give it a gentle shaking, not enough to injure the fruit, then fell the barrel and let the apples come a little distance, say half an inch, above where the head of the barrel fits into the staves, then put the head over the fruit and press it down into its proper position. To be sure this process will slightly jam the fruit next to the head, but a barrel thus packed will bear to be carried to New York or Liverpool, and this is the only safe and reliable way to prevent apples from becoming bruised when in transit.

I will only say to the younger portion of this audience, and in this State, who are about to enter upon the practice of orcharding, my advice to you is, begin with the pruning knife early, and do not be afraid of the use of it, but open up the centre of the tree to the sun, in order to have good fruit.

MR. ATHERTON, referring to the paper of Mr. Atkins, on the codling moth, said: The paper just read is a most interesting one to me, and I hope my enthusiastic friend will continue these investigations until he shall arrive at something more definite with regard to the time when the codling moth lays its eggs, so that if any remedy can be applied at that time, it may be done. I have understood that sprinkling apple trees with Paris Green has proved very successful, but I don't remember as it was stated at what time it was applied, whether in autumn or when the apples were small. It is a well known fact that in the southern and middle states, they frequently have two broods of the apple worms, while in this latitude we seldom have but one. It was my observation last season, (it was an unusual year for us), that we had two broods. I took some apples from a tree in November and found a number of very small worms, half an inch in length, and I was convinced that we had two broods of them. Another thing also convinced me of this; while examining my trees for the apple tree borer, in June, I carried a small sharp trowel to scrape the trunks of the trees and scraped out a great many of the apple worms, some of them very small. Finding them in June and November led me to believe that we might

have had last year, not only an unusual number of apple worms, but two broods of them. I think this is sometimes, but not usually the case. I think the worm seeks to ascend after it leaves the apple, which confirms what has been said in the paper, that the worm after coming out, climbs up. But while I would not take the ground that the worm never enters the ground, I will say that while scraping my trees I have found large numbers of them under the loose bark. It occurs to me that we might take advantage of this in the spring and destroy many of them. A great many will get through the winter and form cocoons under the bark. Would it not be a good idea in the month of April to scrape the trees and apply water? I am determined to try it, I believe it will be a good thing to do.

Mr. SIMPSON, of Brunswick, recommended sprinkling the trees with ashes, while wet, after a shower, to destroy bark lice.

Mr. HENRY S. SMITH, of Monmouth, spoke at some length, urging co-operation among farmers and orchardists for the extermination of injurious insects; and presented the following resolutions, the adoption of which, at this time, he thought might be premature, but he hoped their presentation would serve to draw the attention of the public to the importance of the subject, and might result in some concerted and effective action:

Resolved, That in view of the damage done by insects to many of our crops, and especially to fruit, it is the duty of the Legislature to adopt and enforce measures to encourage the extermination of such insects.

Resolved, That the President and Secretaries of this Society be a committee to petition the Legislature at its next regular session to adopt such measures.

Resolved, That said committee be and are hereby instructed to invite the Board of Agriculture to join them in this work.

On motion of Mr. GILMAN,

Voted, That the resolutions presented by Mr. Smith be referred to the President and Secretaries of the Pomological Society, and also to the officers of the Board of Agriculture, and if in their judgment they deem it proper to call the attention of the Legislature to the subject matter of the resolutions, that they be authorized to do so.

DISTANCE FOR PLANTING.

Mr. BRIGGS inquired of Mr. Prince whether in setting his six-acre orchard, he set the trees in rows both ways, and why he set pear trees in the squares between the rows.

Mr. PRINCE. I did it simply because I thought the trees were not near enough together; I wanted more, and hence I set the pear trees; my apple trees being originally thirty feet apart. I have set pear trees between a part, and between the rest I have set apple trees. Where there were four trees, I put one in the centre between them—not opposite. I leave every fourth row in order to have a place to drive between.

Mr. GARDINER. I once had a Bellflower tree which spread over a space of forty feet. What would become of such a tree as that in an orchard where the trees are but twenty feet apart?

Mr. PRINCE. Where you find one tree that spreads forty feet you will find forty that do not spread twenty feet.

Mrs. STRATTARD. We have an orchard of about three hundred trees, now beginning to bear, which are set thirty feet apart each way, and to-day they are getting so they interlace or touch each other; it is hard to get through with a team. There is a drain from three to five feet in depth under each row, and you will hardly find a thriftier orchard in that vicinity. They are growing on what was once a frog pond.

O. C. NELSON, of New Gloucester. I will say that from my experience in orcharding I have been in favor of the practice of setting close, say twenty feet apart, for various reasons. I have been successful with the Nodhead. I have grafted trees that grew up naturally, without removing them, and have obtained strong trees.

Question. Do you manure them?

Answer. I put something about them every year; some years I have mulched with straw or hay, sometimes with barn-yard manure, very light; sometimes mulched them with sand; a little something every year.

Mr. ATHERTON. How old are those trees that you have set twenty feet apart?

Mr. NELSON. Those trees were set in 1848. They didn't make much growth. At that time the ground was used as a vegetable garden. I commenced to take care of them and they commenced to bear. They have borne heavily until within four or five years.

I thought swamp muck was excellent for mulching trees, and I put in four ox-cart loads between each four in the square. The result was. I did not get good Baldwins for three years. The apples wouldn't stay on the tree; they were rough. I had to plow it and put in pigs. Finally I put on a dressing of leached ashes, and now they bear. To be sure my trees interlace, but they are growing taller and no limbs die. I thought if I could obtain in twenty years, with trees twenty feet apart, the same profit from a tree that the trees forty feet apart would give in forty years, I had better take the close setting. These trees being close, the wind does not affect them.

Mr. GARDINER. In Gardiner there is a small orchard of very fine trees, set from fifteen to eighteen feet apart. The result is, that the outside trees bear large crops and the inner ones no apples at all. They are all interlaced and cannot get light and air, and do not bear. I asked the proprietor why he didn't cut down every other tree. He said they were so fine he couldn't make up his mind to do it.

THE SIZE OF BARRELS FOR APPLES.

Mr. GILMAN. I would like to inquire of Mr. Pope or Mr. Ather-ton, in respect to the size of the barrels in which apples are packed for shipment in Michigan and Western New York. How do they compare with ordinary flour barrels?

Mr. POPE. I am informed that the regular apple barrel of New York holds two and one-half bushels of the fruit, and that in Michigan and New York the fruit is put in new barrels made on purpose, costing about thirty-five cents each.

Mr. GILMAN. It is an important question, when we consider the magnitude of the crop of apples in this State as it is destined to be in the future, What should be the size of our barrels? If we go into the market with a peck more of apples in a barrel than they do in Michigan and New York, we are put at a disadvantage.

Mr. GILMAN, referring to the paper of Mr. Prince, inquired with respect to the

STORAGE OF FRUIT.

Did I understand Mr. Prince to say that he put apples in bulk and allowed them to lay in bulk from the time of harvesting until

the middle of February? If so, in what condition do they come out?

MR. PRINCE. I would say that formerly, as I stated in my paper, I kept my apples upon shelves, but I found that they were liable to wither in that way. The cellar I have now for a fruit cellar is used for that purpose only. It has a cemented floor and the walls are of split stone laid in cement. I put the apples in bulk, sometimes with boards at the bottom and sometimes directly upon the cement floor. I think I have had full as good success laying them upon the floor, piling them, I don't care how deep, three or four feet. They keep better than in barrels or upon shelves, or any other way that I have tried. I am careful to have no leaves with them, for a leaf is as bad as a rotten apple. I never disturb them until I want to market them, even if there are rotten apples. In 1879 I was away; I had four hundred bushels of Baldwins all in one pile, which was from three to five feet in height, coming up to the cellar windows. They laid there until the 10th of March. When I sold them and packed them there were less than two bushels decayed. As I said, I would never keep them in a dry cellar. The cellar of the house I live in is dry, being warmed by a furnace, and I find apples don't keep at all in it. I would have a cellar damp, but not wet, not wet enough so the moisture would stand upon the apples; but moist, and I don't care how cool if it does not freeze. If apples are frozen a little, some think, it don't hurt them,—I don't think they are as good as before, although they may look as well.

MR. GARDINER. The late Nathan Foster, of Gardiner, was remarkably successful in raising and caring for apples. He often said that he made it a point that his children should have an apple to eat every day in the year. He would keep them until the new crop came in. Once on a cold day in December, the thermometer being below zero, I went to his cellar and found his cellar windows open. He said he wanted to keep the temperature below 32° the whole time, and that the apples would not freeze until it went below 28°.

MR. ATHERTON. I would ask Mr. Prince how, if his cellar is too dry, he obtains the requisite dampness or moisture? And before I sit down I want to say a word with regard to temperature. I have recently learned something that I didn't know before, and that is that you can run the temperature down to twenty-eight or thirty degrees with safety; my opinion having previously been that it was

unsafe. I recently visited one of the foremost farmers of Winthrop, and had the pleasure of going into his fruit cellar in company with two other gentlemen. He showed us his bin of Baldwins, which were in bulk. The cellar had a cemented floor and appeared to be dry. The apples were in a bin some four feet wide and from ten to twelve feet long. I should judge their depth to be from four to six feet. He had a thermometer lying upon the apples. I never saw handsomer Baldwins; it was a rich treat to look upon them, they were so large and of such a bright, beautiful color. They were well assorted and ready for the market, but he was not ready to sell them. He said he kept the temperature down to 28 or 30 degrees, and he said: "I am not afraid if it runs down to 28." I also learned that it is better to keep Baldwins in bulk than in barrels or upon shelves. My practice has been to put No. 2 Baldwins on shelves some distance from the bottom. Baldwins will keep better on shelves than in barrels. I shall never barrel Baldwins in the fall again; shall put them in bulk. Rhode Island Greenings will not bear barrelling; they should be kept in an open bin in the cellar.

MR. PRINCE. You ask how I can make a cellar moist. I would say, I don't intend to have it so. My fruit cellar is more than half above the ground, but in a moderately moist soil. I believe that any cellar with a cement floor and the walls laid in cement will be moist enough to keep fruit. I think a cellar with a wall of common round stone and laid up open would be dryer than one with both wall and floor laid in cement. I think where both the walls and floor are laid in cement it would be moist enough.

MR. GARDINER. I do not see how it is possible to keep the yellow Bellflowers in bulk; they are so tender that in picking they will show the marks of the fingers upon them, and if carried and dumped on a barn floor and left in bulk, 99 per cent of them would be bruised. Therefore I cannot see any other way to handle them except to pick them from the tree and put them into barrels by hand, assorting them at the same time. They will keep until April if not bruised. If they are bruised they will not keep.

MR. PRINCE. I think, if you sort your apples as you pick them, and let them lay until spring, you will find a good many of your No. 1 apples No. 2s, and your No. 2s will be No. 3. When I gather my apples I put all that are sound together and let them lay until I want to sell them; then I sort them. It saves one sorting. I never allow my apples to be overhauled until they are ready for

the market. I never sort except to pick out the decayed ones. There is no need of dumping them in a pile in bulk. I pick my apples by hand in small baskets. I have several years lined my cart body with blankets so they will not bruise in emptying them into the cart. I take them to my cellar and put them in by hand, and let them be until it is time to sell them.

MR. NELSON. With regard to wet cellars. One of our apple buyers has told me that the best apples he gets are from wet cellars. I had occasion, a year or two ago, to visit a farmer in Androscoggin county who is celebrated for keeping apples. I found his cellar was floored over, and 400 bushels of Baldwins in a bin. I looked through the cracks of the floor and saw water underneath. He said he kept water there; and if the natural flow of the water stopped, he pumped water in, but did not allow it to become stagnant. He is noted for putting his Baldwins on the market in June in as good condition as mine are in December.

WESTERN TREES.

Considerable discussion took place in respect to the merits and value of western trees, as compared with those grown in this State; but without eliciting anything of importance in addition to the points previously settled by the Society—some of which are, that it is vastly more important to inquire *how* a tree is grown, taken up, set out and cared for, than *where* it is grown; that good trees and poor ones are grown both in and out of the State; “that Maine can and ought to grow her own apple trees;” that all the good trees grown in Maine find a ready sale; that vast quantities of trees are still brought into the State from abroad; etc., etc. A question was raised in regard to the most profitable

VARIETIES FOR MARKET.

MR. CHILD, of ———, said: I think no person can tell what variety he can do best with until he tries them. I raise more Baldwins than any other kind, and still I believe I can raise more No. 1 Hubbardstons than of any other variety. I have a few Black Oxfords. They grow small with me; but a neighbor who has an orchard not more than 50 rods from mine, on what people would call the same soil, raises the best Black Oxfords I ever saw. What the

reason is I don't know. He says he can sell these black apples as well as any others.

Mr. POPE called for statements in regard to

THE WAGENER APPLE.

Mr. ATHERTON. I know but little about it; I have only three trees; they have been set seven or eight years. They commenced to bear four years after setting. It is an early and free bearer, but slow grower; the limbs are inclined to run upward. I mean they are inclined to be prolific bearers while young. I was well pleased with my first crop from these trees, and thought highly of the apple. With my second crop I was not as well pleased, because they mildewed badly in the cellar, and almost entirely ruined the sale of them. Since that time I have had none to speak of; I have had no further experience in that way. I have had this year, some of fair size and good color. With regard to the flavor of the fruit, I should pronounce it superior to the Baldwin, a better eating apple, finer grain, but the skin is tender and requires more delicate handling than the Baldwin.

Question. How is it as a keeper?

Mr. ATHERTON. It will keep as well as the Baldwin; it can be kept in good condition until March or April.

Mr. POPE. I have never raised the fruit and am not acquainted with it; but as the agents are pushing it through our section, and the farmers buy largely, I took pains at our exhibition last autumn, to inquire of all who had raised it, and have referred to several parties who have the fruit, and with one exception, and hardly that, they have all pronounced the apple worthless for a market variety. It comes into bearing early, bears heavily and very good fruit, but it over-bears; it is crowded so that only a portion of the fruit is large enough for market, and in a very few years the trees are exhausted, and never attain a large size. They all agree upon that.

Mr. SWEETSER. I have two trees of the Wagener, and as Mr. Pope and Mr. Atherton both stated, they bear early and over-bear. I have picked half of them standing on the ground. I think ten feet is far enough apart to set them, if Baldwins are 30 feet, because they never will live to be old trees; they over-bear so they never will have large tops. I think it is a superior fruit, nice, and fine-grained, but not a profitable variety to plant largely.

MR. GILBERT. Why do we want to plant the apple at all? What of the fact that they recommend the character of the fruit? I have watched this fruit from its first introduction into the State—the characteristics of the tree and its habit of growth. It is an early and most persistent bearer. Now what is the result when you find those two qualities in combination? That it is almost impossible to grow up a good, well-formed and fairly good sized tree which will produce a large quantity of apples. You will usually see such trees of small size, and finally they bear their life out in the fruit. And further than that, they are naturally small; their habit of overbearing renders it impossible to bring them to a large size. If you feed the tree and make it grow larger, or try to, you simply employ the means without effect. They are small; you find them generally quite small—below the medium size. The quality of the fruit is good; the color is good and the fruit is good, and selected specimens of fair size make a good show on plates at the fairs. It is a good apple for the table; but I would ask seriously, When you can raise so many other varieties of uniformly good size and market qualities, why do you want to encourage the introduction of this, unless it is the *best*?

MR. JORDAN. Almost every one wants to get some fruit as quickly as possible. I should take those trees and let them bear; if they do well it is a good thing—and then let them die.

MR. MERRILL. I have seen two rows of the Wagener in a large orchard. Any good, practical, intelligent orchardist, seeing them, would say that the variety was entirely worthless as compared with the Baldwin, or almost any other late-keeping variety. I think, as a rule, we had better discard it. If any one has a small place, it is a good garden variety; it will not occupy a great deal of space.

MR. ATHERTON. I don't like to put my foot down on every new variety. If anything comes out worthy of particular attention, I like to encourage it; and if I could say an encouraging word for the Wagener I would do so; but I cannot say much. I only spoke very highly of its flavor; I was strongly tempted once to order 50 trees in addition to what I had, but thought I would test it further, and I am glad that I did so. My three trees are all I want of it.

COMMITTEE ON NEW FRUITS.

MR. GILBERT. There is one matter which I wish to present to the attention of the Society. The Society is aware that we have frequently presented to our notice, new varieties of fruit; they are offered for sale to purchasers of trees, and generally high prices are charged, with recommendations in proportion to the price asked; and on the supposition of their superiority, many of our fruit growers have bought largely and found themselves encumbered with trees of little value. It has occurred to me that it might be well for the Society to keep a watch of these things, with a view of making itself a medium for the communication of reliable information with regard to them, so that purchasers might have some reliable source of information. I would move that a committee be appointed and charged with the duties of looking after the matter of new fruits, seeking for information and availing themselves of all sources within their reach to obtain that information, and to report, at the next annual meeting, the results of their researches. I am certain that we are to have an avalanche of new varieties pressed into notice within the near future. Our present duty is to forelay by securing such information as we can with regard to them.

The motion of Mr. Gilbert was adopted, and Messrs. S. L. Boardman and W. P. Atherton were appointed as said committee.

POMOLOGICAL NOTES AND REMINISCENCES.

By CALVIN CHAMBERLAIN, of Foxcroft, in a Letter to H. L. Leland.

We here [Piscataquis county] occupy a middle-ground between the southern portion of Maine and the most of New England on one side, and that of the extreme north of Vermont, New Hampshire, Aroostook county and the contiguous Province of New Brunswick on the other. On the one side, our friends glorify the Baldwin and the Russets, and class the luscious Nodhead and Hubbardston Nonsuch as autumn and early winter fruits; on the other and colder side, they talk of Iron-Clads, and are laying the whole Northern Hemisphere under contribution for a moderate list to make home life tolerable in that region. With us, the Baldwin at its best, on our hills, is a fair cooking apple; in the valleys it has no place. The Nodhead and Hubbardston Nonsuch, as representatives

of their class of keepers, abide with us in good cellars through the winter. But I have before put myself on record on this point.

The valley of the Piscataquis, having been first settled by emigrants from the older settlements of New England, they naturally took their first grafting from the fruits that suited their taste in childhood; and their first-grown apples were a rich solace to years of privation and suppressed homesickness. An old uncle of mine, who moved from Massachusetts to the wilderness east of the Penobscot early in this century, once said to me: "When we raised our first apples, and one of them came as my share on a winter evening before the great open fire, I would pare it prudently and eat it slowly. The paring, core, seeds and stem lay before me. The seeds were carefully saved to be planted in spring. Then to prolong the taste of that apple, I ate the parings, then the core followed—and lastly I chewed the stem."

My father, the late Samuel Chamberlain, planted a small nursery on the land he first cleared in the present town of Foxcroft, and when this was sufficiently grown he grafted some of the trees with scions from his native place, Charlton, Mass. This grafting must have been done from the year 1810 to 1814, as the fruit appeared very soon after the last date. I hoed over that little nursery of about four square rods many times before the last of the trees were removed.

As a boy I heard very little said about names of apples. In after years I learned that this beginning included two greenings, four sweet apples, one early sour, one large red winter apple, and the since well-known Hubbardston Nonsuch. One of the greenings is that known as Limbertwig. The other, a smaller apple, called by us the Cluster Greening, from its habit of giving several apples to each set of blossoms. It was a nice winter fruit, but was not continued beyond the first few grafted trees. The sweet were one early autumn, called the Hightop (not the well-known Hightop of the present), a juicy, very sweet apple, of the size and form of the Porter; one a little later in season, called Spurr Sweet by some; one the Pound Sweet; and the fourth, the Talman. The large red was larger—when we could get a good one from a young, thrifty tree—than the King or Rolfe or any other apple I ever saw in Maine. Trees with ordinary care or under neglect, gave only green, worthless fruit, little colored. It was condemned after a trial of twenty years as not adapted to the climate. Of the Hubbardston Nonsuch I have

something to say further on. The early sour was a nice apple, but the single tree standing too near the hog-pen died suddenly after a few years of good service, and the variety was lost. I have not met that apple since, and rarely find one so good.

I have reasons for thinking this grafting of my father's was the first done within the present limits of this county, as in after years I was called to do grafting in most of the towns, and on the farms commenced near the same time, and then learned that no grafted fruits had ever grown on them. In the twenty years following this first successful grafting, my father occasionally extended his work and added a few varieties; but in the whole his bearing, grafted trees scarcely counted beyond a hundred, while his orchards had grown to a thousand. In these years a few other men had entered this field of progress, prominent among whom, was Capt. Salmon Holmes, from Oxford county, who made one of the best farms and one of the largest grafted orchards in Foxcroft.

My father's work ended in his death by accident in 1838. I then returned from Michigan where I had been two years cutting out a home in the big timber, and entered upon the care of the orchards I had helped to plant, and where I continued for the next thirteen years. From this time I took a hand with the workers and did some real labor for a few years in the cause of fruit culture; and I hope to be pardoned for the use I must make of the pronoun I in referring to some of it. In disposing of one or two crops of apples I tired of working the cider-mill two or three months in a season (the mill worked for this and adjoining towns), and became disgusted with selling good cooking apples in the orchard, sixteen bushels for a dollar, and doing most of the work of picking and loading them. Some years before this, I had some personal acquaintance with many orchards and their owners, in Kennebec county; had spent several months in a good orchard district in Massachusetts, and had seen something of Connecticut, New York and Ohio. The circumstances in which I was placed in 1838 were urgent prompters in the way of orchard improvement. With abundant material to work upon, and a considerable circle of acquaintance from which to get good advice and better fruits, I entered with considerable zeal upon the work of improving myself and the orchards. My success in the way of good advice was rapid and satisfactory for the time, and in collecting varieties of apples I was soon over-loaded. I met and made the acquaintance of Marcian Seavey and Dr. E. Holmes at the printing

office of the *Maine Farmer*, at Winthrop. I met Dr. Holmes, Nathan Foster, John Kezer, Daniel Fairbanks, and two or three others, and organized a pomological society—and then and there we made the blunder of giving a sweet name to a sour apple presented by the venerable Paul Bailey, the man and the apples being present—and neither the man nor apples objecting. I made the acquaintance of Moses B. Sears, who probably did more grafting than any other man in Maine; and from his work, and that of N. Foster, D. Fairbanks and some other successful operators, I made the heads of grown trees a study, to so change them to better fruit *safely* through the least possible number of scions, and in the least time.

I was in the meetings of fruit growers holden in Syracuse, Rochester and Boston, and became familiar with the faces and voices of many of the giant workers in the past and present, among which I particularly remember the names of Kennicott, Thomas, (David and John J., father and son), Barry, Reed, Hovey, Downing and Wilder. I had accomplished something before receiving help through the books of Downing, Cole and Thomas. I had become a rapid and successful operator in the orchard and nursery, and my reputation as such became somewhat an annoyance from pressing invitations to do work for others. To this I yielded for a few years, and in five consecutive years set one hundred thousand scions for myself and others, and in all the towns from Abbott and Monson, to Brownville and Milo. In these years I urged boys and men to learn and practice for themselves, giving them all the necessary instructions to start. With this sort of gratuitous work done in every neighborhood I entered, I soon had the pleasure of seeing several young men carrying on the work I had well begun.

In these years of orchard work I introduced most of the leading varieties known in the State, that had not reached here before. Jewett's Red (Nodhead) I first obtained from Hon. Joseph E. Foxcroft, the proprietor and patron of this town. On a package of scions received from him, he wrote: "Nodhead. Of this variety you cannot raise too many."

I moved from the old farm to a few acres at the village in 1851, and started a nursery—putting 3000 trees in the cellar, which I grafted in winter and set out in the spring of 1852. To these I made additions in the three following years, so as to have ten thousand grafted trees growing at once. Considerable zeal was then abroad for new and good orchards. Agents for the large western

nurseries then appeared. Those who could resist importunities to give orders, made much talk of setting orchards with home-grown trees; and being advised that they could be set in either spring or fall, and as the trees were in stock in quantity in their neighborhood, few were quite ready to take them in spring, and would defer to fall. In fall they would conclude to wait till spring.

The deep snows of winter and excessive cold wrought havoc on the nursery; and at the end of a few years I cleaned the thing up and discharged it in the smoke of a few brush-heaps. The maker of the county map honored my place as *the nursery*—all else was emptiness. I never received 25 cents a day for the time I had given it. Let the work of the tree peddlers go on. I can buy a better tree than I can grow here;—and what is more, we are almost sure, with each tree bought, to get new fruit, unheard of before and not ordered.

Names are important things in fruit matters. The origin and history of a choice variety sometimes seems to confer honor and dignity upon the locality producing it, so that men contend for that honor when the matter of place happens to rest in doubt. This is seen in the case of the Baldwin apple. I raise a question in regard to the

ORIGIN OF THE HUBBARDSTON NONSUCH.

I asked a friend in Barre, Mass., for scions of that variety. On sending them he expressed regret that he had not received notice a few days earlier, as he had occasion to pass the original tree in the adjoining town of Hubbardston. As it was, he was able to take them from a tree he knew to be engrafted from the original. These scions soon produced fruit, and you may imagine my surprise on finding it identical in appearance with that from my father's grafting thirty years before. I then sent samples of both to S. W. Cole, editor of the *New England Farmer*, as the then best authority, and he pronounced them alike and true to the name. I then visited the neighborhood where my father obtained his scions, thirty miles and more south of Hubbardston, and in an earlier settled portion of the State, and there in Charlton and Southbridge, in Massachusetts, and Thompson, in Connecticut, in the oldest orchards, found trees bearing this same apple—trees of the largest size and greatest age, and giving no sign of being grafted in the tops. They surely were grafted at the root. Doubting the claim of origin, I then obtained

the following : That a tract of land twelve miles square, embracing Hubbardston and three other towns, was purchased of the Indians, and that the owners of the tract had encouraged about thirty families to settle upon it before or near the year 1750. There is an account of one Jonathan Allen setting out the first orchard, bringing forty trees from Lexington on the back of a horse. The year not given. Now putting things together, my friend in Barre could have taken scions from the original (?) tree in 1845, and I found many trees bearing the same apple in 1848—trees appearing to be a hundred years old or more ; and if I have made a wide error in an over-estimate of such age, then these trees must have been at their best estate when my father left there in 1806 ; and if grafted from Hubbardston, would undoubtedly have borne the name as now, and that name familiar to him. The facts substantially as I now give them, were given out through the *Maine Farmer* when I had them fresh in hand. My belief is, that the tree in Hubbardston was a graft from the older settlement on the south—but it is a matter of little consequence now.

With the nursery disposed of, and my few acres fairly stocked for family use, I took no further *special* interest in the cause of fruit culture. My fine stock of plums and cherries went out suddenly with the malady of black-knot, and I am not yet able to replace them, as the tendency of those fruits in that direction has not ceased.

Pear trees succeed fairly here, and an increasing interest in that fruit is apparent. Of grapes, I have, or have had, thirty varieties on trial ; but the last two seasons have given little encouragement for continued efforts with them.

I can do no more for the fruit cause with my hands, and can only advise the people of our county of Piscataquis to continue to work for good apples and pears, believing that in and through them will come many of the blessings of life.

NOTES ON PEAR CULTURE.

By D. P. TRUE, of Leeds Centre.

Pear growing in this State is largely on the increase, many of the trees that have been put out in the past have already borne their first fruits, and those who have waited and watched feel a new interest as they reap the reward of their labor. But to secure the

best results, the right location and suitable varieties should be chosen. The pear is more delicate than the apple, and will not bear the disadvantage of a dry or wet soil as well. It requires a deep, friable loam, with a rather dry subsoil, as its roots run deep. Hill-sides are good locations.

Standard pears should be set twenty-five or thirty feet apart, and dwarf pear or plum trees may be set between them; as these trees come to bearing very young and are short-lived, will give some fruit soon and will die or can be cut away so as to give room for the standard trees.

Of the numerous varieties on trial, many proving desirable in other sections do not give satisfaction in this State. For an early pear, Osband's Summer is perfectly hardy, a good grower, and great bearer; ripens the middle of August. The Brandywine is a good pear and follows Osband's Summer in the order of ripening, but it takes the tree a long time to come to bearing. Clapp's Favorite is a large, fine pear; tree very hardy. Of the fall pears, the Flemish Beauty is one of the best, if the fruit did not have the habit of cracking. Those that have trees of this variety can very readily change the top by grafting. They make the hardest of stocks, will stand the winters where many of the "Iron-Clad" varieties of apples will not. The writer has seen the Flemish Beauty growing and fruiting in the town of Hodgdon, in Aroostook county, and the owner, Col. Thomas, said that in his location he only succeeded with five or six of the "Iron-Clad" apples. The pear can be as readily grafted as the apple. The Louise Bonne de Jersey, Beurre Superfine and Beurre d' Anjou have proved very hardy and good bearers. The Lawrence is one of the best winter varieties; tree very hardy and has never failed to mature its fruit. A number of the winter varieties fail to ripen in this section. The Vicar of Winkfield is one of this class, but it is very productive, the fruit is large, and quite good if it can be well ripened. Winter Nelis is one of the most delicious of pears, but in many locations is not hardy.

In the analysis of the wood of the pear and apple, the heart wood of the apple was found to contain 6.2 per cent of potash, and the pear, 26.4 per cent. Of phosphate of lime, the apple contained 5.2, and the pear, 20.9 per cent. We see by this comparison how necessary good culture is; and do we wonder why we often meet with failure when the pear is planted in our old worn-out soils? The land should be constantly tilled among the trees, and the ma-

nure should be such as to give a constant growth. Apply potash in the form of wood ashes, phosphate of lime in bone manure; use lime, stable manure, salt, plaster, etc.

Blight has been the bane of the pear grower in other States, but up to the present but little trouble from it has been experienced in this State. Insects are not very numerous on the pear. For slugs, throw slaked lime among the leaves and branches when the dew is on. As a rule the winter pears are best when allowed to remain on the tree as long as the season will permit, but some of the summer and autumn varieties, if allowed to remain on the tree until fully ripe, will become dry and insipid.

Pears when gathered should be packed in barrels or boxes, for, like the russet apple, they will wither if exposed too long in the open air. As a general thing, it costs more to raise pears than apples, yet they are so desirable that every fruit grower should cultivate them, and carefully select the best and most hardy.

EARLY GRAPES FOR THE NORTH.

By H. A. ROBINSON, of Foxcroft.

Every year the possibility of growing and ripening grapes still a little farther north, is increased by the production and dissemination of new varieties which ripen extremely early; a great advance having been made in that direction in the last few years.

Here, at Foxcroft, latitude $45^{\circ} 15'$, we are beyond the northern limit of the ripening of the Concord and such other varieties as ripen with it. The Delaware, being a sweet grape, will, in favorable seasons and in good locations, get to be quite good eating.

But we now have a long list of varieties earlier than the Concord. Of the more than forty varieties which I have now growing, and to which I am adding every year from all over the country, those kinds which have the recommendation of extreme earliness, I will mention a few, first early, and of good quality. The Lady grape, originated by Mr. Geo. W. Campbell of Delaware, Ohio, is a seedling of the Concord, first early, greenish white, sweet and good. Moore's Early, another Concord seedling, originated by Capt. John B. Moore of Concord, Mass., is very early. Berry large, black, good quality. These I have fruited and can recommend.

There is a new very early black grape, the Early Victor, originated by Mr. John Burr of Leavenworth, Kan., which has not yet fruited

with me, but which is so unanimously well spoken of by those who have fruited it, as a very early, hardy grape of excellent quality, that I have no doubt it will prove to be so.

Other early varieties of varying quality in order of merit are, Early Dawn, Cottage, Janesville, Florence, Hartford Prolific, Blood's Black, Champion, (poor), etc. Others that ripen a trifle later, but earlier than the Concord, are, El Dorado, Purity, Brighton, Massasoit, Vergennes, August Giant, Worden, Wyoming Red, Dracut Amber, etc., to which might be added as many more all earlier than the Concord. But these will suffice. Those who are greatly interested in the matter will learn from the various catalogues the names and characteristics of the different varieties. For those who only want a few varieties, the above is a sufficient guide to kinds of a satisfactory quality. One's taste should be educated to crave better grapes than the Clinton, Hartford, Champion, etc. It is as easy to cultivate the vine of a good variety as that of a poor one, and the satisfaction is much greater. To be sure, our grapes do not have that sweetness and fine flavor that grapes have that grow in a warmer climate, but we need not for that reason remain entirely without.

At the magnificent fair of the Pennsylvania Horticultural Society, held at Philadelphia last September, I was shown and invited to taste the famed "Niagara" grape—the grape that is held and controlled by a company who refuse to dispose of a single vine except upon stringent conditions and for vineyard planting; the company to share in the production for a term of years. These grapes were grown, so the gentleman in charge informed me, upon the Jefferson estate at Monticello, in Virginia, and had been sent by a round-about way to the fair, yet they were in perfect condition—the boxes even full, and in quality perfectly delicious beyond what I had ever imagined a grape could be. The skins, which seemed at first to resist, would break with a sudden sharpness and then was let loose what seemed to be nectar—a mixture of stored sunshine and honey-dew. The bare remembrance of that taste is a pleasure.

But I have an idea that those grapes were more perfect in flavor and sweetness raised in the warm and balmy air of the "Old Dominion" than they would have been grown in New York or Massachusetts; as much better, perhaps, as their grapes are better and sweeter than ours.

The Niagara is a large greenish white grape, developed from a cross between the Concord and Cassady. The Cassady was an immense bearer, greenish white, with a peculiar honeyed sweetness which seems to have descended to the Niagara. Ripens about with the Concord.

At the fair of the Massachusetts Horticultural Society, in Boston the next week, I saw Moore's early grape as grown by the originator. It was very fine. Also a new early white grape by the same originator, named the Francis B. Hayes, or as it will probably be called for short, the "Hayes." This grape has been awarded a first-class certificate of merit by the Massachusetts Society, and will be for sale in the spring of 1884.

I obtained, in the fall of 1882, a vine of the Jessica, a new white grape introduced by Dr. D. W. Beadle of the St. Catharine's nurseries, Ontario. This he claims is the earliest white grape in existence, ripening with or before the Champion, and of the best quality; equal to the Delaware. If so it will do to plant alongside of the Lady.

Green grapes, or rather those not quite ripe, make excellent jelly, jam and preserves. They sell in this section for from 5 to 10 cts. per pound for these purposes; and grapes that are fairly ripe will always bring 10 cts.

Why not plant a few grape vines suited to your climate, in some favorable location, on the south side of some building, great boulder, ledge or stone wall? I see plenty of such places through the country and I never see them without thinking—what a nice chance for a grape vine. If people would only improve their opportunities, how much they might have that they do not now have. They would have a strawberry patch, where on three or four square rods would grow all the strawberries an ordinary family would need. Fresh fruits and berries are wholesome, and are luxuries that the farmer and his family, who can so easily have them, too often go without. This may be owing partly to the lack of knowledge of their proper and successful cultivation, and oft-times doubtless is; but that can be easily acquired.

Vines that can be planted on high ridges or elevated lands will often escape late and early frosts, and mature grapes when those situated on the lowlands in the same vicinity may be injured. The foliage of the grape vine is easily ruined by frost, especially in the spring; and a very light freezing injures the fruit.

Grape vines should, on the approach of winter, be pruned and laid down upon the ground ; and it is well to place on them a few ever-green boughs or something of the sort, especially if they are not situated where the snow will drift over them early to protect them.

In buying, I always as far as possible order of the originator of the variety wanted. Next, of long-established and reliable nursery-men, at their nurseries ; and then take pains to permanently label the different varieties. A very simple way to do that is to write the name on a small strip of sheet zinc with a common black lead pencil. It will last for years.

I think that in the southern part of the State, where the long list of grapes that ripen about with the Concord will barely mature, better fruit would be obtained by planting the best of the very early varieties, as they would ripen while the weather was warm and more favorable for the development of that sweetness which only comes with a proper degree of warmth and by long hanging upon the vine.

THE SWEET PRINCIPLE OF FRUITS AND PLANTS.

Reprinted from the transactions of the Massachusetts Horticultural Society by permission of the author,

DR. JAMES R. NICHOLS, of Haverill, Mass.

The most interesting phenomenon connected with the growth of fruits and vegetables, is the development in their structures of chemical principles which influence in a peculiar manner the sense of taste. A variety of impressions are produced upon the nerves of taste, some of which are agreeable and others disagreeable, by bringing in contact the juices of certain fruits, roots, grasses, leaves, etc., in their mature and fresh condition. The sense of sweetness is usually agreeable, while the sour and the bitter are of the opposite character.

The term sweet is applied to a class of bodies which are found in fruits, and in a considerable number of vegetable structures, but we do not clearly understand *how* they are capable of exerting so decided and pleasurable an influence upon the palate, not only of human beings, but upon animals as well. As we walk through our gardens and orchards, and watch the growth of the luxuriant products of the soil, we do not often stop to consider the intricate and wonderful chemical reactions which are unceasingly taking place in everything that springs from the earth upon which we

tread. We place the luscious ripened fruits upon our tables, and partake of them with deep sensual gratification, but we do not often consider the origin and nature of the complex agents which render them so acceptable.

The sense of taste is in some respects the most mysterious and wonderful of all senses. If the sense of touch is, as seems probable, the parent sense, or the primal avenue through which mind was able to assert itself, it must be that taste was the next most necessary sense for man's elevation and protection. All we know about it chemically or physiologically, is that a delicate network of nerves ramifies through the tissues of the tongue, and in surrounding or adjacent parts, and that they have the functional duty to perform of conveying to the "central office,"—the brain,—sensations as regards the nature of what is brought in contact. If we examine into the chemical or physical character of these nerves, we do not find that they are in the slightest respect different from the optic or auditory nerves which transmit sensations so absolutely unlike. They are the same in color, structure, and chemical constitution; but how different their office! Nature has fixed limits to our fields of investigation, and however anxiously we may inquire, we cannot take a single step over the boundary line which divides the known from the unknowable. We must content ourselves, therefore, with the act of bringing substances in contact with the little telephonic nerve conductors of the mouth, and permit them to inform the interior man whether they are noxious or innoxious, agreeable or disagreeable, and not ask *how* the messages are conveyed.

Substances characterized by sweetness, are assumed to contain an organic product called sugar, and, as a class, vegetable structures do contain it in some one of its forms. There are, however, a few substances which have a sweet taste not due to sugar. Acetate of lead is an example afforded in the mineral world, and glycerine is a sweet liquid, the base of fatty acid compounds having no sugar. There is a form called *hepatic* sugar, which is a product of the liver, and some of the secretions of the body contain it. It is, however, in the organic world that we find sugar in the vast quantities needed by man, and in the juices of fruits and plants we find its hiding place.

Before vegetable physiology and chemistry were understood, the belief prevailed that all the characteristic constituents of fruits and

plants were in some way hunted from the soil, and conveyed to their resting places by the sap, which was known to circulate through living vegetable organisms. Although no sugar could be detected in any soil by the most persistent scrutiny, yet it was supposed that sugar, and its associated acid and other plant constituents, were present, and ready for transportation by the ascending sap. We are disposed to smile at this error of our fathers, but we should remember that, in accounting for natural phenomena, or seeking for a reason for things, the easiest and shortest path is the one usually followed. This remains true until we are guided by facts learned from accurate observation and experiment, or until science becomes sufficiently robust to act as an unerring guide.

Science, in our epoch, is capable of explaining many of the former mysteries of plant movements and plant production, and we now know the source of the sweet principle of fruits and plants,—we know that the soil has no direct agency in supplying sugar to any organic structure.

Sugar is a very remarkable substance, and its investigation opens to view surprises and paradoxes not afforded by any other agent in nature. It is highly complex in its organization, having a high atomic constitution, and yet it is the simplest of all compounds when considered in regard to the nature of the elements of which it is composed.

In studying the sweet principle of plants, we soon discover that they possess the capability of elaborating more than one variety of sugar in their structures, and that there is a curious blending of several forms in the ripened fruits which come upon our tables. We discover, also, that each plant has the power of manufacturing a special variety, or a combination of varieties, and that this law of their constitution cannot be changed by man.

In beet roots, in the stems and trunks of the sugar maple tree, the sycamore, the palm, in sugar canes, in the sorghum plant, in the stalks of maize, in grasses, we have one kind of sugar, called *sucrose*, which is the sweetest variety; in grapes we have another distinct variety, called *dextrose* or *glucose*; in apples and other fruits we have still another, called *fructose* or *levulose*. In melons we have a sweet which is nearly pure *sucrose*, or cane sugar. We learn from this examination not only that sugars differ widely, but that, for wise and doubtless beneficent reasons, the Supreme Intelligence has not permitted all fruits and plants to be sweetened

alike. In that vegetable monstrosity called a beet, which is hidden from the clear sunlight and the air during the whole period of its growth, there are found juices which hold the most noble and valuable form of sugar known to man. The crimson tissues of this root contain the snow-white sugar which graces the tea tables of the kings and princes of continental Europe; and millions of pounds find their way into commerce, always commanding the highest prices. The humble, earthly beet, can hold up its head in pride, when its sweetness is contrasted with that of the petted grape, which occupies the foremost place among our delicious fruits. The grape is sweetened with glucose, an ignoble form of sugar which the chemist can make in the laboratory, and its production does not require the employment of costly or rare materials. Even if it lessens our respect for the tempting fruit of the vine, the truth must be told. The chemist can make the sweet juices of the grape from old cotton rags and old newspapers; and if this statement does not indicate a sufficiently low origin, I have only to remark that it can be made from common sawdust as well. Human art has not yet been able to number among its triumphs the production of the sugar of the beet, the maple, or the cane.

The sweet principle of fruits, other than the grape, cannot be imitated in the laboratory. It is a mixture of at least two forms of sugar—sucrose and dextrose—in varying proportions, as is shown in the following tables.

How curious and mysterious is this plan in nature, of delicately adjusting the taste of our noble fruits, so as to produce a sense of the highest enjoyment in their use. In some fruits we find the sweet to exist in its lowest modified form; but this is not due to a lessening of the amount of the sweetest sugar, but to the presence of an entirely different kind. It is probable that the peculiar delicate flavor and taste of the grape could not be secured by any adjustment of quantity of sucrose or cane sugar, or by any mixtures. It requires glucose, pure and simple, to act in conjunction with the delicate acids, in order that we may have this fruit in its highest perfection. The watermelon would not be the fruit it is if it had not the capability of manufacturing cane sugar in large quantities; neither would the apple, the peach, the cherry, the strawberry, or the pear be what they are, if the plants and trees upon which they grow had not the power of bringing into play a subtle chemistry, by which is produced a mixture of distinct forms

of sweets which no art of man can imitate. If there was in nature but one kind of sugar, the number of choice delicacies in our gardens and fruit orchards would be lamentably small.

But nature does not, in the bestowal of her fruits, spontaneously, or of her own free will, sweeten them for us so acceptably. What are designed to be luxuries and the most highly prized forms of food, she ordains shall be bestowed only through the exercise of labor, care, and skill, on the part of man. No one of the fruits in its wild or native state holds any considerable quantity of sugar of any kind—not enough to make it acceptable to the taste, or fit it to serve as food. It is only by skillful cultivation, by hybridizing, by budding and grafting, that we have secured the sweet principle in fruits. We have, as it were, educated the dumb chemists in the vegetable cell, and fitted them for the work which nature made them competent to perform under man's guidance.

It is indeed wonderful that we can increase or diminish the amount of sugar in any kind of fruit or plant by cultivation. The beet, for example, under ordinary care, will afford from four to six per cent of sugar; but, by scientific and generous culture, the percentage can be nearly or quite doubled. I have succeeded in increasing the sweet principle in apples, grapes, and peaches, by cultivation and proper fertilization, and this, when the principle was originally present in normal quantity. In increasing the sugar, we also increase every other desirable quality in the fruit; for one principle cannot be forced into prominence without being accompanied by all the others.

I will now endeavor to explain by the aid of chemical symbols the nature of the different sugars, and also show the nature of the sweet principle of some fruits. In the arrangement of symbols, table No. 1, I bring to view the atomic constitution of a molecule of sucrose or cane sugar; also that of starch, and the necessary changes to convert starch into sugar.

Table No. 1.

Sucrose	C ₁₂	H ₂₂	O ₁₁
Aqua	H ₂	O	
Starch.....	C ₆	H ₁₀	O ₅
Multiply by.....			2
	C ₁₂	H ₂₀	O ₁₀
Add.....		H ₂	O
Sucose	C ₁₂	H ₂₂	O ₁₁

Table No. 2.

Glucose.....	C ₆	H ₁₂	O ₆
Multiply by			2
	C ₁₂	H ₂₄	O ₁₂
Subtract.....		H ₂	O
Sugar	C ₁₂	H ₂₂	O ₁₁

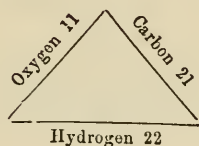


Table No. 3.

HOW FRUITS ARE SWEETENED.

	Cane Sugar.	Grape Sugar.
Strawberries.....	6.37.....	4.98
Peaches	2.10	3.17
Pears.....	.62.....	8.42
Oranges ...	4.22.....	4.36
Grapes (Black Hamburg) .....	.00.....	17.26
“ (Concord) .....	.00.....	14.08
“ (Green).....	.00.....	1.60
Melons (Water)	8.17.....	.00
“ (Musk).....	9.02.....	.00
Dextrose ..	C ₆	H ₁₂ O ₆
Levulose.....	C ₆	H ₁₂ O ₆
Fruit Sugar.....	C ₆	H ₁₂ O ₆

A molecule of common water is represented thus, $H_2 O$, which means that it is composed of two atoms of hydrogen and one of oxygen. Now to form sugar out of starch we must double the molecule, and this we do by multiplying the starch molecule by two, but this does not give us sugar; it is necessary to add a molecule of water, which gives us in the diagram, sugar, as shown by comparing the resultant line of notation with the upper.

In table No. 2 is shown the composition of grape sugar or glucose, and also how it must be modified so as to change it into cane sugar. We must first double the molecule as is shown, and then *subtract* one molecule of water, and this gives us cane sugar, $C_{12} H_{22} O_{11}$. In the triangle is presented a hypothetical molecule of cane sugar, composed of its constituent atoms, Oxygen, Hydrogen and Carbon. It is apparent that a substance so constituted must be in a condition of unstable equilibrium, for there is constant tendency to change and form new compounds. Sugar is a substance very easily decomposed, and by the application of heat, a large number of new compounds result. One of these new bodies is alcohol, which is represented by the formula



An examination of the diagrams will show you how starch is converted into glucose. Starch has the formula as shown,



Now if we add to a molecule one molecule of water, $H_2 O$, we have glucose,



and this is all that is necessary to convert the starch of corn or potatoes into the sweet principle of grapes.

We cannot convert starch into cane sugar, because we cannot double the size of the molecule and force into combination one more molecule of water. If we could accomplish this result, all our crystallizable cane sugar would be made in the laboratory, and the growth of sugar cane, beets, etc., would cease, as the artificial process would supply sugar at cheaper rates.

We can make grape sugar out of starch, because we have discovered a method of forcing one more molecule of water into combination with it, and this gives us glucose.

Table No. 3 explains how several kinds of fruits are sweetened. The percentage of cane sugar and fruit sugars which enters into

strawberries, peaches, pears, etc., is shown. It will be noticed that in grapes no cane sugar is presented; the sweet principle is entirely glucose. Of course fruits vary greatly in the amount of sugar they contain. These examples are presented as the results of analysis made with the view of obtaining general or approximative results. Whilst it is possible to increase the saccharine principle, and also to modify the hydrated malic acid constituent in fruits, it is entirely beyond our power to change the fixed nature of vines, shrubs, and trees by any methods of cultivation or fertilization yet discovered. I know of nothing more wonderful in nature than the persistency with which vegetable structures adhere to their original bent or design. Trees producing sour apples, pears, peaches, or vines producing astringent grapes, cannot be turned aside from their laboratory work, unless by the introduction of scions, or the employment of the knife in other ways.

We all know that two trees growing side by side, from the same soil, breathing the same air, and precisely alike in external and internal structure, will grow fruit totally dissimilar in chemical constituents and physical appearance. If a young sour apple tree is cut off low in its trunk, and scions of another kind inserted, it is changed only above the point where they are placed. The chemical reactions below continue true to their original instinct, and if fruit comes from a sprout it is charged with the acid juices of the parent tree.

We thus have the bewildering fact brought before us that sap circulating through one portion of a tree culminates in the production of excess of acid in the fruit; while in another there is found an excess of sugar. It is not unusual to observe a newly set scion bud, blossom, and bear fruit the first year. The apple may weigh ten times as much as the frail scion which held it up, and supplied the nutriment necessary for its growth, but the little twig transplanted to an alien limb, will set up a laboratory of its own, and from the strange juices brought to it, will manufacture fruit entirely dissimilar to its companion fruits growing in close proximity. An example of this nature was afforded in my orchard, when from a scion having a surface for cell action of only nine square inches, a sweet apple was grown weighing seven ounces, and affording from its juices ninety-three grains of fruit sugar.

We have, however, still more wonderful examples of fruit chemistry in apples which in their own structure exhibit sectional differ-

ences of composition, one-half or one-quarter being saccharine, the other portions being extremely acid, and having the sectional lines distinctly drawn. I have seen a basket of this remarkable fruit in which the divisions were in all proportions, but each one unmistakably marked.

I have brought to view these interesting examples of plant chemistry, not with the supposition that they are new to you, but simply to awaken inquiry and stimulate research, that we may, if possible, obtain new light upon some most perplexing problems.

The sap of plants, which is largely water, may have but little agency in influencing those changes which result in the production of the sweet principle in fruits. Cell action, controlled by the actinic solar ray, is unquestionably the source or active agent in the chemical changes which accompany vegetable life. The vast volume of water, which in the form of sap courses through our fruit trees, cannot, however, be lightly regarded. It brings to the cells the elements and molecules of inorganic material, which enter into the reactions involved in plant chemistry; and it is only through the sap that we can beneficially influence the products of our orchards and vineyards. It is probable that we do not often stop to consider the immense preponderance of water in our fruits, which is shown by analysis.

Several years ago, I made analysis of several varieties of apples, with the view of determining their exact food value. Among them were the Talman's Sweet, Hubbardston and Baldwin.

The apples selected were in different stages of ripeness, the Hubbardston being more advanced than the others. Very important modifications are produced by the chemical changes in apples as they approach the stage of maturity, or the period when they become mellow and ready for the table. The amount of sugar increases, and the hydrated malic acid decreases, or disappears altogether in some fruits. The cell walls of the structure become softened, and readily break down; oxidation begins at any point where imperfection or abrasions in the skin occur. The amount of nutritive material is to some extent increased in ripe apples, and they are much more easily digested and assimilated by men and animals.

The results of the analysis were as follows :

HUBBARDSTONS.

Water	88.57
Albuminoids, pectose gum, and sugar	11.27
Ash	0.16
	<hr/>
	100.00

TALMAN'S SWEETS.

Water	83.29
Albuminoids, sugar, pectose gum, etc.	16.54
Ash.....	0.17
	<hr/>
	100.00

The unripe Baldwins gave 87 per cent water, with a less amount of albuminoids and sugar than the others, and considerable free hydrated malic acid. The sugar varied from about 5 per cent in the Baldwins to 9 per cent in the Sweets. The total insoluble matters, including skin, seeds, pectine, ash, etc., averaged about 3.25 per cent.

These results show how largely preponderating in apples is the water, which in amount is about 85 per cent of their weight. Therefore, a tree bearing 30 bushels (46 pounds to the bushel), holds up in the fruit about *half a ton* of water. The nutritive value of apples, is, of course, not in the water, but in the solids,—albuminoids, sugar and gum. In a bushel of Hubbardstons, there is about six pounds of soluble nutritive material at the period of ripening; in Talman's Sweets, about seven pounds; in Baldwins, five pounds; and this material will vary to a considerable extent in value. Sugar is a carbonaceous substance, and nutritive in a certain direction. It is mainly useful as fuel, and by oxidation serves to maintain animal warmth. The albuminoids are nitrogenous and therefore are foods proper; the gum is also a food.

The albuminoids are seldom found above half of one per cent in any varieties, and this would give us less than four ounces in the bushel; of sugar, we find in a bushel about two and a half pounds in acid fruits, and considerably more in sweet.

The analysis of apples as presented, shows that the amount of nutriment, or absolute food they contain, in proportion to bulk, is small. This research extended over considerable ground, much of

which is not pertinent to this discussion. I will simply say that, as regards apples as food for animals, my practical experience in feeding them confirms the results of analysis. They are of *some* value, and when fed in connection with meal, serve to give zest to the appetite and keep animals in health. The riper the apples the better the results, and they should not be fed in a half-frozen state to milch cows, as this course will invariably cut short the milk supply. If they are cooked by boiling, their value is much enhanced, as more perfect digestion results.

In the cultivation of fruits, we should not be misled by the fact that they do not, in themselves, exhaust soils, except in a slight degree. The constituent principles of fruits are, to a large extent, organic, and, therefore, derivable from water and the atmosphere. Sugar, the important principle of all fruits, takes nothing from the soil which has money value. The albuminoids, as has been shown, are very sparsely distributed through most of our fruits, and as they hold the nitrogenous element, it is seen that nitrogenous manures are not needed in large quantities in orchards or fruit gardens. Analysis of the grape shows that in most varieties nitrogen, as supplied in manures, is not necessary. The results of analysis in the case of all fruits, have been satisfactorily confirmed in my practical experience.

I have never found nitrogenous manures to exert marked specific influence upon any of my fruit crops, and years ago I discontinued their use. Fruit trees, shrubs, and vines need nitrogen, but the spontaneous supply in soils is fully equal to the comparatively small amounts required. There is one mineral element which may be said to be the pabulum *par excellence* of growing fruits, and that is potash. It is certainly true that we cannot raise perfect and desirable fruits if we withhold this element from the soils of our orchards. When it is considered that we influence growing fruits only through the act of rendering the tree or vine vigorous and healthy, and when we further consider how much potash is required to maintain a normal condition in large fruit trees, which are constantly under the pruning saw and knife, we obtain some correct views of the importance of this agent in soils. Both the fruit of the vine, and the vine itself, are great consumers of potash. The same may be said of most of our small or soft fruits.

It is not usually advisable to attempt to reclaim and render productive a worn out grape border, but if any satisfactory success is

attainable, it is only through a plentiful supply of good wood ashes and bone meal.

Twenty years ago, I discovered that it was best, in preparing borders for cold grape houses, to use plenty of wood ashes, and to place the fertilizing materials in successive thin layers, rather than in the usual form of a mixed heap. I have one border prepared in this way which is made up of sixty alternating strata of different fertilizing substances, and they have remained undisturbed for twenty years. The fruit product from this border has been uniformly excellent in quantity and quality, from year to year, and renewal has not been necessary.

My view is, that the subterranean feeders of the vine will follow what may be designated as vegetable instinct in procuring food, going no further for it than is necessary. If we place phosphoric acid, lime, potash, and nitrogenous salts in distinct layers, each resting upon one of good soil, we place our vine roots, as it were, at a table spread with many dishes, and unerring instinct will guide in selecting what is needed to keep the vine and fruit in the best possible condition.

The saccharine qualities of the Black Hamburg and Frontignan varieties are greatly improved by having at hand plentiful supplies of potash; and wood ashes is the best possible source for this alkali. The German chlorides are next to be preferred, but they do not, in vineyards, meet the desirable results supplied by ashes.

The ordinary German Kainit, as found in commerce, I class among the poisons in the list of assumed vegetable foods. I have never failed to observe injurious results in the use of these salts on my farm. Common salt is not a manure, and we may as well so decide once for all.

After an experience of nearly a quarter of a century in conducting an experimental farm, I have reached the conclusion that the growth of our fruits, and most of our cereal crops, is best promoted by the use of a fertilizing mixture, made up of finely ground fresh bones and good wood ashes. This mixture I arranged and recommended twenty years ago, and I find after persistent soil experiments, extending over many years, that I am using it more freely than ever.

My method of preparing it is, to take six barrels of pure raw bone flour, and twelve of good wood ashes, and mix them well together upon a shed floor, adding, during the mixing, twenty

buckets of water and one barrel of gypsum or plaster. This mixture may be allowed to stand a few weeks, or it may be used at once if needed. If permitted to stand long it heats from chemical action, and the freed ammonia is in part fixed as a sulphate by the plaster, but not all of it.

For fruits of every kind I know of no better fertilizing material, and as it supplies every needed element of nutrition, its effects are remarkably persistent and immediate.

But, gentlemen, I must detain you no longer. I cannot think that I have presented anything new, or of special value to a company so intelligent and experienced as this. There are old facts and forms of knowledge, which it is well to call up for consideration occasionally, as we often find that the good and excellent have been neglected because they are old.

AN ESSAY ON FLORICULTURE.

By MRS. A. B. STRATTARD, of Monroe.

"These are thy glorious works, Parent of good,
Almighty! Thine this universal frame,
Thus wondrous fair; thyself how wondrous then,
Unspeakable! who sittest above these heavens,
To us invisible, or dimly seen
In these thy lowest works; yet these declare
The goodness beyond thought, and power divine."

"And nature is to me a living thing,
Food to the heart, and beauty to the eye:
The bud, the flower, the autumn's mellow sky
Awake the moral thought and sympathy."

The cultivation of flowers is a God-given vocation, and is as old as the creation itself. The great All-Father created man in His own image, and made him only "a little lower than the angels," and as a fitting home for such a creation, He made the garden of Eden and filled it almost to overflowing with all manner of fruits and flowers, and placed man in the midst of it, that he might enjoy them, and worship Him by looking "through nature up to nature's God." And to-day every flower that grows on the face of this fair earth of ours, had its origin in the garden of Eden, which in its turn was a part of the beautiful gardens in that bright world beyond—

"Where everlasting spring abides,
And never-withering flowers."

God created flowers as a connecting link between Himself and man, and they were made so beautiful that even "Solomon in all his glory was not arrayed like unto one of the humblest of them." All the way down through the ages of the past, and even to the present day, floriculture has kept even pace with civilization, cultivation and refinement.

And yet there *are* people to be found occasionally, even in this enlightened age, who will call all this rubbish, and who have no love for flowers, and no appreciation of their beauty. I recollect a case of this kind—two or three years ago, (while attending the yearly campmeeting at Northport). A lady acquaintance who was as great a lover of flowers as myself, suggested that we trim our town tent with wild flowers and vines, to take away the bare, hut-like look of the building; while we were arranging the flowers and vines, a minister from our town sat looking at us for some time quite soberly, and at last he said to me: "Do you expect to get to heaven any quicker for that, or to see any such rubbish as that there?" "Sir," said I, "I could as soon conceive of a heaven without a God, as a heaven without flowers! In fact, I consider flowers a gift of God, and part of heaven itself." He said: "That is blasphemy." Do you think it was? I do not. Truly and well has one of our eminent divines said: "Blessed is he who really loves flowers; who loves them for their own sake—for their beauty, their associations, the joy they *have* given and *always will* give; so that he would sit down among them as friends and companions, if there were no one else on earth to admire and praise them. But such persons need no blessing of mine. They are blessed of God! Did he not make the world for them?"

I said that floriculture had kept even pace with cultivation, civilization and refinement. When Babylon was at the summit of her glory, her immense hanging gardens, in which all manner of flowers and fruits were cultivated, were considered so beautiful as to be named as one of the seven wonders of the then known world. Where are her gardens to-day? and where are her people? Verily they have departed, and faded away together. Rome, when she "sat on her seven hills, and from her throne of beauty ruled the world," was almost like Eden in the superabundance of her fruits and flowers. Her glory has likewise departed.

But we will come down to our own times. Who looks to find flowers, (except such as nature has sprinkled there), growing about

the wigwam of the Indian, or to find *him* sitting under his own vine? They are of the class, "who, having eyes, see not; and ears, hear not." The voiceless lips of the flowers never speak to *his* soul, to tell him the message that *their* Maker has sent by them to all; and, alas! we too often find persons living in civilized countries, yes, and even in our own good State, who are just as deaf and blind to all the beautiful influences of flowers as the untutored Indian. I suppose there always will be such people in the world, (as it is said that it takes all kinds to make a world), but be that as it may, we find that both floriculture and horticulture have taken almost giant strides in the last half century; yes, even within the last quarter of a century. Well and truly has the poet Whittier said:

"I look across the lapse of half a century,
And call to mind old homesteads, where no flower
Told that the spring had come, but evil weeds,
Nightshade and rough-leaved burdock in the place
Of the sweet doorway greeting of the rose
And honeysuckle, where the house walls seemed
Blistering in the sun, without a tree or vine
To cast the tremulous shadow of its leaves
Across the curtainless windows from whose panes
Fluttered the signal rags of shiftlessness."

Many of us here can look back over half that length of time and remember many a place, (or homestead rather), in our own towns, which were then bare and unsightly, but which to-day are surrounded with beautiful flowers and luxuriant vines, with thrifty, well-kept orchards in the background, arbors covered with fruitful grape vines and currants and other small fruits scattered here and there about the grounds, all forming a picture very much the reverse of the poet's above. Homesteads, such as he has too truly delineated, are to-day exceptions, and these exceptions are found mostly in localities where refinement and culture have made but slow progress. And if the persons who are responsible for these exceptional cases could only be led to see what a great drawback to the beauty of the rural landscape the barren and desolate aspect of their farm-houses and out-buildings is, I have no doubt they would exert themselves to produce a different state of things.

How well I remember the gardens of the village, in Massachusetts, where I lived forty years ago. It was a place of considerable size, about twenty-four miles from Boston. There were but two gardens that one could really call flower gardens. I had to pass them both

every day in going to and returning from school. How I used to love to stand and look through the palings at those gardens; sometimes I would almost forget where I had started to go, in admiring those flowers. One of the gardens belonged to a widow lady who lived in her large house alone; she always seemed unwilling to allow the scholars the privilege of even looking at her flowers. It was in her garden that I first saw petunias; they were the single white and magenta colored; but oh, how lovely they looked to me. As for the other flowers, they were such as one would find in most gardens at that time—two or three varieties of roses, (red and white and old-fashioned Provence and Cinnamon), hollyhocks, gillias, sweet-williams, marigolds, Spice pinks, London pride, etc. The lady that owned the other garden, (which contained about the same things, only a greater profusion of roses), was the exact reverse of the widow. She would fill our hands full of roses in their season, and it used to seem to me that the more she gave us, the more she had; and I believe it is always thus with flowers. It happened a year or two ago, that I visited the same village, and I could hardly find a house without a beautiful flower garden attached; and there were also many greenhouses, all of which were doing a thriving business. I thought to myself, why cannot it be the same in my own little village at home? But when I thought it over, I was fain to confess that the change had been as great among the people here, according to their facilities, as it had been there. I find where there was but one house in the place (thirty-one years ago, when I came here), that could make any pretension at all to a flower garden, there is scarcely a house in the village, or for some distance out on the roads leading from it, but has one now; and they are also well kept, and filled not only with the old-fashioned flowers of our grandmothers' days, but also with the newer varieties. There has also been a great change in horticulture. But still there are some persons, (thank heaven they are not many), who seem too intent upon field labor, or upon making money, to have time or inclination to make their dwellings beautiful, or to give their children a little plot of ground for a garden. And yet they say: "Why do our children leave us?" The great heart of humanity reaches out after the beautiful; if it cannot find it here, it will go yonder to seek it. How well does the human spider who sits behind the bar of the gilded saloon know this. Everything that can attract the eye, all that can allure the sense are here displayed; and so the young and

innocent are enticed to enter, and they are lost ; when if those very places had been stripped as bare of every object of beauty as some farm-houses are, they would have turned away with a shudder of disgust. God has given us this love for the beautiful, and He has also given us more than enough to satisfy all our longings for it “Beauty is an all-pervading presence. It unfolds in the numberless flowers of the spring. It waves in the branches of the trees, and the green blades of grass.” We cannot look anywhere without feeling that we are encompassed with it ; and it is sad to think there are people living in the midst of all this beauty, as blind to it as if instead of this fair earth, with all its beautiful flowers, and the glorious sky over all, they were tenants of a dungeon. Let us each and all try to instil into the minds and hearts of our children a true and genuine love for all these beautiful gifts of God, and more *especially* for flowers and floriculture. If we have had it starved and choked out of our natures, let us *not* follow the same course with *our* children. Let us walk with the beautiful !

“ I hear thee say, ‘The beautiful ! what is it?’
Be sure, ’tis no long, weary road, its form to visit,
For thou canst make it smile beside thy door,
Then love the beautiful.”

RAILROAD GARDENING.

By JOHN BURR, of Freeport.

The improvement in laying out lawns, and decorating the grounds around the stations with shade trees and flowers, has been for some years extensively practiced in different parts of Europe, and carried to such an extent, that, to use the expression of a friend, “Some of the roads there looked like one large flower garden.” In our own country, on the roads running from New York to Philadelphia, they use an extremely large amount of plants for summer decoration. It is stated that last year one road alone gave an order for fifty thousand plants to be used for decorating the different parks and stations along its line. In New England, the railroads are not to any considerable extent, and I might say, not at all beautified with plants and flowers, except the MAINE CENTRAL, which, running from Portland to Waterville by two routes, and thence to Vanceboro’—besides its many branches—has for a few years past decorated its principal stations with flowering and foliage plants, besides lay-

ing out a large number of parks and lawns which are planted with shade trees.

I propose, in this paper, to give a brief account of the origin and extent of the decorations and improvements on the line of the Maine Central railroad and its branches.

During the years 1879 and '80 the stations on the line of the road running from Cumberland Junction to Waterville, and its branches, very many of them, were much improved by the laying out of parks and lawns where the grounds would admit of it. Walnut Hill, Gray, Danville Junction, Auburn Park, Leeds Station, Monmouth and Winthrop each had improvements made, and in each case the work was very finely laid out and finished; so that at each station the lawn presented a beautiful deep green. In 1880, Maranacook was opened up and laid out for a summer resort, and it would be needless for me to attempt to describe its many attractions, as it has become so familiar to all. On the lower route, Woodford's, Cumberland Junction, Freeport, Brunswick Park, Riverside, Winslow and Fairfield each had their lawn or park as the grounds would allow. These were either filled up and graded and then turfed with rich sods, or sown with lawn grass seed, and as they are all kept sheared, one can easily conceive how attractive they are. The larger parks have been set with trees. Auburn and Brunswick particularly having each a fine lot of thrifty trees, that in a few years will be very ornamental, not only to the road but the city and village. The grounds at Waterville are set with trees, but they are so extensive, and I believe a portion belong to the colleges there, that they are not enclosed, but are very fine.

This work has been done, on the back route, under the direction and supervision of Mr. Geo. Wagg, and on the lower route by Mr. Geo. Nevens, both gentlemen of very fine taste. Besides these there has been very much done from Waterville to Bangor, and since the Maine Central has taken control of the European & North American Line, the same beautifying of stations has been commenced there.

The New York *Graphic*, of June 29, 1883, speaking of the amount of plants, &c., used on the different roads, says: "Now the General Manager of the Maine Central railroad takes as naturally to this method as a part of his management as a duck takes to water, but it is not applied the same way. No prizes are offered upon the Maine Central for the care and ornamentation of the depot

grounds and tracks, because it is believed that the practice is unfair, it being manifestly the case that in some situations these grounds will present a pleasing and satisfactory appearance, even though the minimum of attention and labor is bestowed upon them, while others can hardly be beautiful though the keeper should tear his hair in anxiety over the matter—besides, the thing should be done upon principle, as a matter of duty and as a part of good system in carrying forward the interests of the road.”

Up to the year 1881 much had been done in setting shrubs and trees along the line; parks had been laid out and depot grounds graded. In the spring of 1881, Mr. Tucker, as General Manager, conceived the idea of beautifying the stations with flowers, and as Freeport was a station which seemed well fitted for the work, a portion of the grounds, about one hundred feet long and twenty-four feet wide, was prepared and beds laid out. In the center of the garden the name of the station was worked in colors, so that a person riding on the cars could easily read the words “Freeport.” The plants used were those that would bloom most freely through the summer months, so that by the middle of July there was a fine show of flowers. The result of the experiment was very satisfactory, and in the spring of 1882 Mr. Tucker decided to decorate the principal stations along the line of the road, where the grounds would admit of it. As a result, Danville Junction, Anburn, Leeds Station and Winthrop, on the back route, and Woodford’s, Freeport, Brunswick and Waterville, on the lower road, were improved as principal places, while there were quite a number of stations that had a small circle or bed of plants to break up the plain green of their lawns, making a fine contrast. This year was also a success, the majority or nearly every one doing very nicely. The spring of 1883 was the same as the spring of 1882, only more stations were supplied with plants and some changes were made in the arrangements of the beds, the results being satisfactory. So that now the decorating of the road has become so familiar to the travelling public that one will read with pleasure the reports given by the summer tourists from all parts of our country.

While giving praise to each and all who have had the care, to a greater or less extent, of the grounds as laid out and planted, I feel that I ought to mention the gardens at Crowley’s Junction, Leeds Station and Winthrop, which were unusually fine, particularly those at Crowley’s and Leeds. These were under the supervision of Mrs.

Knowles at Crowley's and Miss Ham at Leeds, both ladies of very fine tastes, and quite amateur florists. Besides the summer gardens at these stations, they have large windows which are, during the winter months more particularly, filled with flowering and foliage plants; and one will have to look a long time to find prettier windows or better kept plants than found here. There are many other stations at which the operators or station agents make a very fine show of plants in their windows during the winter, but none who have so good facilities as the two named.

When the work of decorating the different stations was commenced, those who had the care of it felt a little fear that the different people having charge of the plants would not care for them through the summer, but it gives me great pleasure to say that with hardly an exception all have joined in trying to get the best results; and at quite a number of stations where, during the hot dry days of summer, the plants had to be watered, the station agent would see that this was done each day, so that failure in a single instance has not occurred; and to-day the different station agents look forward to their flowers and gardens with the same feelings and anticipations that the ladies do to their private gardens at home.

Now the good results arising from the system of railroad garden-
ing can hardly be enumerated. It extends far beyond the mere planting of beautiful flowers along the line; it has the effect to bring up the grounds of each station to that standard of neatness for which the road is justly credited, and it also is an example for each village and city through which the road passes, that they could follow with profit. Very many are seeing the good effects, and you will read of village improvement societies being formed in many places. Wherever the work has commenced you will readily see the good effects in the trees being trimmed, unsightly banks graded, flowering shrubs planted, and beds of plants set out. It also elevates and stimulates individuals to the improvement of private grounds, and the result will be, that people who never thought to set a tree or shrub, or purchase a plant for summer decoration, will now commence to beautify their own homes, and by so doing not only add to the beauty, but to the attractions of home. The system of railroad gardening is yet in its infancy. It will be but a few years before all roads which aspire to having everything attractive and pleasing to the travelling public will follow the lead of the Maine Central, which in this, as in other improvements, has

always been a pioneer; and we will see the stations all over our New England as tastily arranged, and as neatly kept as a gentleman's grounds.

I have often heard the question asked: "Of what use is this work?" I think I have fully explained some, but not nearly all, the good arising from it; and I believe there is no one thing that has been done by the persons having the care of the Maine Central railroad that will do so much to elevate and improve the public mind, as the beautifying of the road with shrubs, trees and flowers.

This report has already reached the length originally assigned to it, and there are some matters of particular interest which cannot properly be omitted. It is therefore necessary to omit the remaining papers read at the winter meeting.

REPORT OF COMMITTEE ON EXHIBITION OF FRUITS AT THE WINTER MEETING.

The committee appointed to examine the exhibition of fruit are pleased to say that although the past has been called an off year, still, an examination of tables loaded with more than two hundred plates of apples and six of pears, from different parts of the State, shows that Maine is progressing in this most lucrative and pleasant calling, and we trust that in this respect she will be true to her motto, "Dirigo," and will ere long be celebrated in the markets of the world for her long-keeping, fine-grained, melting, juicy and excellent flavored winter apples.

The exhibitors, with the number of varieties exhibited by each, are as follows:

O. C. Nelson,	New Gloucester,	12 plates.
H. S. Cary,	Topsham,	12 "
E. A. Lapham,	Pittston,	14 "
T. M. Merrill,	New Gloucester,	4 "
L. H. Blossom,	Turner,	7 "
Jas. M. Carpenter,	Pittston,	14 "
D. J. Briggs,	Turner,	11 "

S. R. Sweetser,	Cumberland,	18 plates.
W. P. Atherton,	Hallowell,	27 “
W. H. Pearson,	Vassalboro’,	1 “
Mrs. D. Smiley,	“	2 “
Chas. Osborne,	“	2 “
J. W. Starkey,	“	1 “
J. R. Smiley,	“	1 “
R. H. Gardiner,	Gardiner,	5 “
W. R. Wharff,	“	15 “
G. K. Staples,	Temple,	14 “
D. W. Merrill,	New Gloucester,	2 plates and limb.
C. H. Page,	—————	1 plate.
J. C. Dudley,	Readfield,	13 “
C. J. Gilman	Brunswick,	2 “
J. Pope & Son,	Manchester,	2 “
Frederick Wright,	Bath,	6 “
G. B. Sawyer,	Wiscasset,	12 “

Among the particularly nice plates were the Hubbardstons of O. C. Nelson; King of Tompkins County of D. J. Briggs; Baldwins and Gilliflowers of S. R. Sweetser; Baldwins of Mrs. D. Smiley; Bellflower of W. R. Wharff; Bellflower of R. H. Gardiner; D. W. Merrill, limb of Hubbardston was very nice; Baldwin by J. Colby Dudley; Starkey and English Sweet by G. B. Sawyer.

The general exhibition of O. C. Nelson was deemed the best, and G. K. Staples, second best.

The pears exhibited were as follows:

D. P. True,	Leeds,	3 varieties.
Henry Ingalls,	Wiscasset,	1 “
L. K. Litchfield,	Winthrop,	1 “
C. H. Page,	—————	1 “

Mrs. A. B. Strattard of Mouroe; Mrs. M. E. Thomas of Rockland, and Mrs. B. A. Townsend of Freeport, exhibited bouquets and cut flowers. Mrs. Townsend also exhibited pot plants which added much to the exhibition.

Grafting wax was exhibited by D. Blake & Co. of Mount Vernon.

RUFUS PRINCE, }
 JAIRUS K. HAMMOND, } *Committee.*

IN MEMORIAM.

The following notices of deceased life members have been contributed by friends or compiled from miscellaneous sources :

GEORGE JEWETT was born in Portland, May 8, 1795. When at the age of about one year his father died and his training and education devolved on his mother. He was graduated from Harvard College in 1816 and adopted the profession of law, which he practiced for a few years at Bowdoinham in this State. Not finding this occupation congenial, he abandoned it and returned to Portland and engaged in mercantile pursuits, being associated with Major Hinckley and doing business at Long Wharf, and after a few years retired to private life. He represented the town of Bowdoinham in the Legislature of 1829.

Mr. Jewett became a member of this Society at its organization, and attended its meetings whenever his health would permit, taking a great interest in all horticultural subjects. He was never married. He died at Portland, April 17, 1883, being then nearly 88 years of age.

ALBERT EMERSON was born in Durham, N. H., June 29, 1810. He came to Bangor in his youth, but soon went to New York City, where he remained about twelve years. He then returned to Bangor and lived there continuously until the day of his death, December 2, 1883, which was also the forty-second anniversary of his wedding. His life was a very busy one, and he retained his active habits until a few weeks before his death, though a victim for many years to debilitating disease. One of his principal pleasures was the superintendence of his large garden, which was full of the choicest fruits and flowers. The care of this garden was always a pleasure to him, even when his physical strength was not equal to it. He delighted in distributing the products of his skill among those who, from lack of knowledge or means were not so highly favored. No little Irish boy who ever looked wistfully and *respectfully* at his apples ever went away empty handed. He did much towards improving the quality of fruit in his city by his intelligent culture of the choicest varieties. Your Society has never had a more enthusiastic devotee on its rolls, I am very sure. One of his last acts was to

stand at his window and watch the pruning of his trees by another hand, when his own strength had failed. There are no startling facts in his life that I can give you. He loved his family and his home, and strove to make all his friends happy; a thorough gentleman of the old school.

JOSEPH M. RICHARDSON of Greene, died at his home in that town, May 18, 1883, aged 73 years, lacking a few days. He was an extensive and eminently successful orchardist, and a highly respected citizen.

HON. ISAIAH STETSON was born in Hampden, February 6, 1812. He removed to Bangor in 1833, where he engaged in general mercantile business in company with Cyrus Emery, under the firm name of Emery and Stetson. In 1835 his brother George was admitted and business conducted under the name of Stetson & Co. till the ill health of Mr. Emery caused him to withdraw in 1850, leaving the remaining partners under the same firm name until the death of Isaiah, which occurred June 30, 1880. He was mayor of Bangor for the four years 1861-62-63-64, and was a member of this Society from its organization.

WILLIAM C. CROSBY was born in Dover, N. H., December 2, 1806, and died at Bangor, February 21, 1880. His early education was obtained in Dover, N. H., and at the Gardiner Lyceum, but was supplemented by extensive and judicious reading. In the spring of 1822, he went with his father to Atkinson, Piscataquis county, Maine, and settled on a farm in the then wilderness. He remained there with his father until the latter part of May, 1828, when he removed to Bangor and opened a store. In 1830, he entered into a co-partnership with Higgins Hill, of Bangor, under the firm name of W. C. Crosby & Company. This partnership was dissolved in October, 1833, but Mr. Crosby remained in trade for about two years longer. In 1835 he removed with his family to Atkinson, where he remained till the spring of 1845.

During the first portion of this period he was connected with his father in the management of the extensive farms and other business of the latter, but later, he had a farm and business of his own, distinct from that of his father. During the latter portion of the time of his residence in Atkinson he studied law, and was admitted to the bar in Piscataquis county in 1845. In 1845 he returned to Bangor and entered into a co-partnership with Daniel T. Jewett in the practice of law, under the firm name of Jewett & Crosby. This firm was dissolved in the autumn of 1850.

During the latter part of his life he became interested in timber lands in Maine and invested a large share of his means in them. He was always interested in gardening and horticulture, at both of which he was very successful.

He was a member of the Common Council of Bangor for the years 1852 and 1853, and of the Board of Aldermen for the years 1870, 1871, 1872 and 1874.

In religion he was a liberal Unitarian. In politics, originally a Whig, afterwards a Republican.

MASON J. METCALF of Monmouth, died in that town June 23, 1883, aged 76 years. His family was of Massachusetts origin, and in his youth he experienced the vicissitudes which appear to have been a heritage of the period. While yet a boy his father removed to Ohio, spending several years in what was then considered a far-off wilderness. The mutations of life, however, brought him again to the East, and he settled in the town of Litchfield, Mass. The subject of this notice meantime had grown to manhood's estate, already having given promise of a future of activity and usefulness. Attaining his majority, he became a resident of Monmouth, which town, notwithstanding several years spent in Boston, where he was engaged at intervals in active business, he ever considered as his home. He was possessed of a remarkably fine mental as well as of a most robust physical organization, and was the originator of several valuable mechanical ideas, among them a certain method of building fences that has become of great utility, particularly in the West, and he was the first to manufacture letter stencils by the use of dies. In later years his inclinations led him to seek the retirement of his country home, where he had acquired valuable mill properties, to which he devoted much attention. His busy tendencies made him a marked man locally, and he was particularly active in matters pertaining to the educational, moral and religious welfare of the community. He was an early promoter and for years the most generous contributor to the support of the Congregational church in Monmouth. In politics he was a pronounced Republican and an influential local factor, distinguished for an inflexible adherence to what he believed to be right. He was a member of the State Legislature in 1869, and repeatedly was called by his fellow townsmen to positions of trust and responsibility.

Dr. ELIPHALET CLARK died at Woodford's, near Portland, June 8, 1883, after a protracted illness. He was born in Strong, May 12, 1801, and was 82 years of age at the time of his decease. His

father was a farmer, one of the first settlers of that village. Eliphalet was educated at Farmington Academy and graduated at the Medical School, Bowdoin College, in 1824. He then studied with Dr. Thomas Little, a very eminent surgeon at New Gloucester, and also with Dr. J. L. Blake at Phillips. He practiced in Wilton successfully for five years, and removed to Portland in 1830. About 1845 he became interested in homœopathy and became a practitioner of that school, the pioneer of Maine. To his profession he was devoted, and, although often urged to accept political office, especially to become a candidate for mayor of the city, he positively declined. He accumulated a large property in his profession, and, a few years ago, took up his residence at Pleasant street. Woodford's.

Dr. Clark early became identified with Methodism, and the denomination in this State owes a great deal to his encouragement and support. He became a member at eighteen years of age, and was a leader later in life. He was the oldest trustee of the Maine Wesleyan Seminary and Female College, and not only gave it liberal donations during his life, but has remembered it in his will. All three of the Portland Methodist churches have been assisted freely by him, and he was, while in Portland, a member of the Chestnut Street society. He also to a great extent contributed to the erection of the new Methodist church at Woodford's.

Dr. Clark was no ordinary man; he was a born leader and inherited the stern and noble qualities of a heroic Puritan ancestry. After removing to Portland, he almost immediately built up for himself a large and lucrative practice both as a surgeon and physician, which he held during his long life, until the infirmities of age and disease obliged him to retire.

In all his social relations Dr. Clark was a model Christian gentleman. Gentle, kind and sympathetic, he drew around him a world of friends—commanding the profound respect of all with whom he associated. His home and family circle was a model of domestic happiness, nearer a type of heaven than earth. Dr. Clark's last sickness was long and painful, but through all his sufferings his religion triumphed. As he approached his end on earth, with his mind perfectly clear and rational, many of his dying words uttered to his friends had the clear ring of the heavenly land. His final exit was the triumphal departure of a Christian hero to the rich rewards of the blest. "He was not, for God took him."

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TRANSACTIONS
OF THE
Maine State Pomological Society,

FOR THE YEAR

— 1884 —

Including the Proceedings of the Winter Meeting held at Gardiner,
February 24 and 25, 1885. .



AUGUSTA:
KENNEBEC JOURNAL BOOK PRINT.
1885.

Committees for the Year 1885.

ON NEW FRUITS.

W. P. ATHERTON, Hallowell.

S. L. BOARDMAN, Augusta.

Miss ALICE FOSTER, Gardiner.

ON NOMENCLATURE.

GEO. B. SAWYER, Wiscasset.

Z. A. GILBERT, North Greene.

D. J. BRIGGS, South Turner.

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To the Secretary of the Maine Board of Agriculture:

I present herewith the Twelfth Annual Report of the transactions of the Maine State Pomological Society, being for the year ending December 31, 1884, but embracing the proceedings of the Winter Meeting, held, by adjournment, February 24th and 25th, 1885. With respect to the latter, which forms the larger and most valuable part of this report, it is proper to say that the theories and opinions expressed in the papers and discussions are to be regarded as the individual expressions of the writers and speakers, and the Society is only responsible for the accuracy and impartiality of the report.

G. B. SAWYER, *Secretary.*

Maine State Pomological Society.

OFFICERS FOR THE YEAR 1884.

President—CHARLES S. POPE, Manchester.

Vice Presidents—S. C. HARLOW, Bangor.

S. R. SWEETSER, Cumberland.

Secretary and Treasurer—GEO. B. SAWYER, Wiscasset.

Executive Committee—The President and Secretary, *ex-officio*; Andrew S. Sawyer, Cape Elizabeth; Leander H. Blossom, Turner; Frank E. Nowell, Fairfield.

Trustees—Androscoggin County, N. W. Harris, Auburn.

Aroostook	"	E. E. Parkhurst, Maysville Centre.
Cumberland	"	Francis C. Jordan, Brunswick.
Franklin	"	G. K. Staples, Temple.
Hancock	"	Charles G. Atkins, Bucksport.
Kennebec	"	Richard C. Plaisted, Gardiner.
Knox	"	Elmas Hoffses, Warren.
Lincoln	"	H. J. A. Simmons, Waldoboro'.
Oxford	"	Jairus K. Hammond, Paris.
Penobscot	"	J. E. Bennoch, Orono.
Piscataquis	"	Henry A. Robinson, Foxcroft.
Sagadahoc	"	Henry S. Cary, Topsham.
Somerset	"	James S. Hoxie, North Fairfield.
Waldo	"	D. B. Johnson, Freedom.
Washington	"	Nelson S. Allen, Dennysville.
York	"	Randall Boothby, Linerick.

COMMITTEES.

ON NEW FRUITS.

W. P. ATHERTON, Hallowell.

S. L. BOARDMAN, Augusta.

ON INTERNATIONAL EXHIBITION AT NEW ORLEANS.

S. L. BOARDMAN, Augusta.

RUFUS PRINCE, Turner.

CHARLES S. POPE, Manchester.

Officers for the Year 1885.

President—CHARLES S. POPE, Manchester.

Vice Presidents—S. R. SWEETSER, Cumberland Centre.

HENRY McLAUGHLIN, Bangor.

Secretary—GEO. B. SAWYER, Wiscasset.

[Resigned.]

SAMUEL L. BOARDMAN, Augusta.

[Appointed May 29, 1885.]

Treasurer—GEO. B. SAWYER, Wiscasset.

Executive Committee—The President and Secretary, *ex-officio*; Andrew S. Sawyer, Cape Elizabeth; Leander H. Blossom, Turner; William P. Ather-ton, Hallowell.

Trustees—Androscoggin County, D. J. Briggs, South Turner.

Aroostook	“	E. E. Parkhurst, Maysville.
Cumberland	“	Otis C. Nelson, New Gloucester.
Franklin	“	G. K. Staples, Temple.
Hancock	“	Charles G. Atkins, Bucksport.
Kennebec	“	Richard C. Plaisted, Gardiner.
Knox	“	Elmas Hoffses, Warren.
Lincoln	“	H. J. A. Simmons, Waldoboro’.
Oxford	“	Jairus K. Hammond, Paris.
Penobscot	“	J. E. Bennoch, Orono.
Piscataquis	“	H. A. Robinson, Foxcroft.
Sagadahoc	“	H. S. Cary, Topsham.
Somerset	“	James S. Hoxie, North Fairfield.
Waldo	“	D. B. Johnson, Freedom.
Washington	“	Nelson S. Allen, Dennysville.
York	“	Luther S. Moore, Limerick.

MEMBERS OF THE SOCIETY.

NOTE—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full Christian names where initials only are given.

LIFE MEMBERS.

Andrews, A. Emery	Gardiner	Johnson, Isaac A.....	Auburn
*Atherton, H. N.....	Hallowell	Jordan, Francis C.....	Brunswick
Atherton, W. P.....	"	Low, Elijah.....	Bangor
Atkins, Charles G.....	Bucksport	Low, S. S.....	"
Atwood, Fred	Winterport	McLaughlin, Henry	"
Bennoch, John E.....	Orono	*Metcalf, M. J.....	Monmouth
Briggs, D. J.....	South Turner	Moore, William G.....	"
Burr, John.....	Freeport	Moor, F. A.....	Waterville
Carter, Otis L.....	Etna	Morton, J. A.....	Bethel
Chase, Henry M.....	North Yarmouth	Morton, William E.....	Portland
Chase, Martin V. B.....	Augusta	*Noyes, Albert.....	Bangor
*Clark, Eliphalet.....	Portland	Perley, Chas. I....	Seward's (Vassalboro')
Crafts, Moses.....	Auburn	Pope, Charles S.....	Manchester
*Crosby, William C.....	Bangor	Pulsifer, D. W.....	Poland
Dana, Woodbury S.....	Portland	*Richards, F. G.....	Gardiner
DeRocher, Peter.....	Waterville	Richards, John T.....	"
Dirwanger, Joseph A.....	Portland	*Richardsen, J. M.....	"
Dunham, W. W.....	North Paris	Roak, George M.....	Auburn
Dyer, Milton.....	Cape Elizabeth	Robinson, Henry A.....	Foxcroft
*Emerson, Albert.....	Bangor	Rolfe, Samuel.....	Portland
Farnsworth, B. B.....	Portland	Sawyer, Andrew S.....	Cape Elizabeth
Frost, Oscar F.....	Monmouth	Sawyer, George B.....	Wiscasset
Gardiner, Robert H.....	Gardiner	Shaw, Stillman W.....	Minot
Gilbert, Z. A.....	North Greene	Simmons, H. J. A.....	Waldoboro'
*Godfrey, John E.....	Bangor	*Smith, Alfred.....	Monmouth
Hanscom, John.....	Saco	Smith, Henry S.....	"
Harlow, S. C.....	Bangor	Starrett, L. F.....	Warren
*Harris, N. C.....	Auburn	*Stetson, Isaiah.....	Bangor
Harris, N. W.....	"	Stilphen, Asbury C.....	Gardiner
Harris, William M.....	"	Stanley, Charles.....	Winthrop
Hersey, T. C.....	Portland	Strout, S. F.....	West Falmouth
Hopkins, Miss S. M.....	Gardiner	Strattard, Mrs. A. B.....	Monroe
Hoxie, James S.....	North Fairfield	Sweetser, S. R.....	Cumberland Centre
Ingalls, Henry.....	Wiscasset	*Taylor, Joseph.....	Belgrade
*Jewett, George.....	Portland	Thomas, William W., Jr.....	Portland

* Deceased.

LIFE MEMBERS—CONCLUDED.

Tilton, William S.....	Chelsea	Wade, Patrick.....	Portland
True, Davis P.....	Leeds Center	*Weston, James C.....	Bangor
Varney, James A.....	Oregon	Wharff, Charles S.....	Gardiner
Vickery, James.....	Portland	Whitney, Edward K.....	Harrison
Vickery, John.....	Auburn	Woodman, George W.....	Portland

—
* Deceased.

ANNUAL MEMBERS—1884.

Allen, B. E.....	North Greene	Ladd, John.....	Starks
Baker, John C.....	Lewiston	Lapham, E. A.....	Pittston
Blossom, Leander H.....	Turner Centre	Leach, H. T.....	East Monmouth
Blossom, G. W.....	Turner	Litchfield, L. K.....	Winthrop
Boardman, Samuel L.....	Augusta	Merrill, T. M.....	West Gloucester
Carpenter, James M.....	Pittston	Mitchell, Israel.....	Lewiston
Cary, Henry S.....	Topsham	Nelson, O. C.....	Upper Gloucester
Chipman, A. B.....	West Gloucester	Nowell, Frank E.....	Fairfield
Dunton, John.....	Lewiston	Peacock, J. R.....	Gardiner
Emerson, Ivory W.....	“	Perkins, L. J.....	Deering
Fulton, James M.....	Bowdeinham	Pierce, Mrs. A. C.....	Lewiston
George, Charles H.....	Hebron	Powers, L. R.....	Georgetown
Gilman, Charles J.....	Brunswick	Prince, Rufus.....	South Turner
Hammond, Jairus K.....	Paris	Staples, G. K.....	Temple
Ham, Nelson.....	Lewiston	Towle, J. J.....	Dixfield
Hoffses, Elmas.....	Warren	Wakefield, Isaiah.....	Greene
Johnson, Henry.....	Turner	Wharff, William R.....	Gardiner
Jordan, Alice M, Miss.....	Auburn	Whitmore, Thomas P.....	Bowdoinham
Kenniston, E. H.....	Simpson's Corner		

Maine State Pomological Society.

TRANSACTIONS FOR 1884.

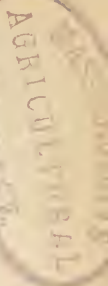
The general outline of the Society's proceedings in the year 1884 was much like that of former years. The annual exhibition was held at Lewiston. September 23d to 26th, inclusive, in connection with the fair of the State Agricultural Society. The annual meeting was convened at the City Building, in Lewiston, September 25th, pursuant to notice given, but was adjourned to the time and place of the Winter Meeting.

The Winter Meeting was held at Gardiner, February 24th and 25th, 1885, independently of any other organization.

The fruit crop of 1884 was undoubtedly the largest ever grown in the State. The season was exceptionally favorable. Notwithstanding the immense production, the crop was a profitable one. There was a steady demand for standard varieties of winter apples for shipment, at remunerative prices. But the autumn apples and miscellaneous kinds of winter fruit were in excess of the demand. The great lesson of the past year is that the profits of the business of orcharding lie in the cultivation of but few varieties, and those such as are known and approved in the markets—well grown, carefully handled and faithfully packed.

THE ANNUAL EXHIBITION

embraced the different classes of fruit, flowers, and some miscellaneous articles, substantially as in former years, and as will more fully appear by the list of premiums offered and awarded. The number of entries was 1183, being a little above the average. The premiums awarded amounted to \$634.00, all of which has been paid. All the classes of fruit were well represented in the entries, the apples being far in excess of all the others combined. The



great abundance and excellent quality of the apple crop of the year, a marked improvement in the art and methods of exhibition, and increased care in the selection of specimens, made the display of apples both attractive and instructive. For the first time, a complete classification was effected of the varieties exhibited as single dishes, and these were marked by placards bearing the names of the varieties in conspicuous letters.


The general collections of apples were so extensive as to be actually burdensome, embracing about 2500 plates. It seems to be necessary that hereafter these collections should be limited to some reasonable number of varieties. In the earlier exhibitions of the Society it was thought necessary to encourage these extensive collections *for the sake of the show*; but now the reverse is true, and they must be restricted in order to bring the exhibition within the limits of the space allotted. The Society has long ago set the seal of its disapproval on the indiscriminate multiplication of varieties, and for this reason, also, the privilege of exhibition should be limited. A person may raise, as a matter of study and experiment, as many varieties as he can find room for, or time and patience to provide labels and receptacles for, but his study and experimenting will have been of little avail if he cannot select twenty or thirty kinds better than all the rest.

GENERAL RULES OF THE EXHIBITION.

1. The general regulations of the Joint Exhibition will govern this department, as far as applicable thereto, and except as herein otherwise provided.

2. Entries may be made at the office of the Secretary, in Wiscasset, personally or by letter, until September 19th, and after that at the Park, on the first day of the exhibition, until 4 o'clock P. M.

3. Exhibitors are requested to present full and accurate lists of the varieties of fruit or other articles to be entered; and to specify the premium for which each article is entered; also to affix their names and P. O. addresses, so that the same may be correctly transferred to the books and exhibition cards.

 Persons intending to make entries will confer a special favor by sending lists of the same to the Secretary at an early day.

4. All fruits and flowers offered for premiums must have been grown by the exhibitor; and any violation of this rule will debar or forfeit the premium. Specimens offered for *exhibition only*, by others

than the growers, must in all cases have the name of the grower affixed, if known.

5. All fruits and flowers exhibited must, as far as possible, be correctly named according to the standard nomenclature adopted by the Society, and it will be the duty of the standing committee of the Society to examine labels and correct all errors in nomenclature during the exhibition.

6. Where a certain number of specimens or varieties, or a definite quantity of any article, is required by the schedule, exhibitors should conform to such requirement; and larger quantities will not be admitted except by special arrangement with the Executive Committee, having reference to economy of space and the symmetry of the exhibition.

7. Dishes and labels for the exhibition of fruits, and phials and stands for cut flowers, will be furnished by the Society, and no others will be admissible. No premium will be paid on any article which is accompanied by an advertisement or business card.

8. Exhibitors must see to the delivery of their contributions, and will be required to put them *in the places designated for them*. After the articles are arranged they will be under the exclusive charge of the Society, and the owners will not have liberty to remove them until the exhibition is closed. All reasonable precautions will be taken for the safe keeping of articles on exhibition, after their arrival and arrangement upon the tables; but the Society will not be responsible for any loss or damage that may occur.

9. No premium will be awarded merely for want of competition, nor unless the article exhibited is worthy of it; and the committees are authorized to withhold the first and award the second or any subsequent premium, or none, at their discretion, according to merit. They are also to withhold all premiums from any articles not exhibited according to the rules, or where any unfair practice has been attempted by the exhibitor.

10. The committees are authorized to recommend gratuities for any new or rare fruits, flowers, plants, or articles of merit for which no premiums have been offered.

11. When a specimen is presented for identification, the exhibitor shall communicate all the information he possesses as to the origin and the local appellation.

12. No member of any of the committees for awarding premiums shall, in any case, vote or decide respecting an award for which such

member may be a competitor, or therein have an interest; but in such case such member shall temporarily vacate his place upon the committee.

13. All premiums awarded will be payable by the Treasurer in sixty days after the close of the exhibition, *subject, however, to the following conditions and limitations, viz:*

1st—The Society guarantees to pay premiums and gratuities to the amount of \$500, but reserves the right, if more than that amount is awarded, to make such a *pro rata* reduction as will reduce the whole amount payable to that sum.

2d—All premiums not applied for before the first day of January next shall revert to the Society.

3d—The Society's premiums are open for competition to all persons residing in the State; but when premiums and gratuities exceeding \$1.00 and less than \$20.00 are awarded to a person not a member of the Society, the fee for membership will be deducted therefrom; and when premiums and gratuities amounting to \$20.00 or more are awarded to any person not a life member of the Society, the fee for life membership will be deducted therefrom; and in either case certificates of membership will be issued accordingly.

LIST OF PREMIUMS OFFERED AND AWARDED.

Class 1—APPLES.

FIRST DIVISION.

Special Regulations. "Entries for all premiums in this division must consist of five specimens of each variety exhibited, and (except Nos. 18 and 19) of at least twenty correctly named varieties. Entries for premiums Nos. 18 and 19 must be separate and distinct collections, not embracing any other collection or specimens, and in awarding the premiums regard will be had both to the quality of the specimens and the value of the varieties exhibited.

"By 'named varieties' is meant such as are named and described in some standard work on Pomology, or have been named and approved by some National or State Horticultural Society.

"In adopting 20 as the number of varieties required in these collections (1 to 17), the Society does not intend to encourage the multiplication of varieties; and the committee will be instructed, in awarding the premiums, to have regard to *quality* and *value* rather than to the number of varieties, and will be authorized to recommend gratuities for meritorious collections embracing less than the number of varieties required as above."

Collections entered in this division for the county premiums were allowed to be entered for the general competition under premium No. 1; but it was provided that no more than one premium should be awarded to any collection.

The number of entries in this division was 105, and the amount of premiums awarded was \$257.50, as follows:

Premium No. 1. For the best general exhibition of apples grown by the exhibitor in any part of the State. Miss L. L. Taylor, Lakeside (Belgrade), first premium, \$15; Perley & Perkins, Seward's (Vassalboro'), second premium, \$10; John Dunton, Lewiston, third premium, \$5.

2. For the best general exhibition of apples grown by the exhibitor, in Androscoggin County. L. H. Blossom, Turner Centre, \$10; D. J. Briggs, South Turner, \$8; G. W. Blossom, Turner, \$5.

3. For the same in Aroostook County. No entry.

4. For the same in Cumberland County. S. R. Sweetser, Cumberland Centre, \$10; Milton Dyer, Cape Elizabeth, \$8; T. M. Merrill, West Gloucester, \$5.

5. For the same in Franklin County. G. K. Staples, Temple, \$10. [2d and 3d not awarded].

6. For the same in Hancock County. No entry.

7. For the same in Kennebec County. J. Pope & Son, Manchester, \$10; E. A. Lapham, Pittston, \$8; W. R. Wharff, Gardiner, \$5.

8. For the same in Knox County. Elmas Hoffses, Warren, \$10. [2d and 3d not awarded.]

9. For same in Lincoln County. H. J. A. Simmons, Waldoboro', \$10; Henry Ingalls, Wiscasset, \$8; G. B. Sawyer, Wiscasset, \$5.

10. For the same in Oxford County. J. J. Towle, Dixfield, \$10; C. H. George, Hebron, \$8.

11. For the same in Penobscot County. J. E. Bennoch, Orono, \$10; E. H. Kenniston, Dixmont, \$8.

12. For the same in Piscataquis County. No entry.

13. For the same in Sagadahoc County. James M. Fulton, Bowdoinham, \$10; Henry S. Carey, Topsham, \$8; L. R. Powers, Georgetown, \$5.

14. For the same in Somerset County. James S. Hoxie, North Fairfield, \$10; Frank E. Nowell, Fairfield, \$8; John Ladd, Starks, \$5.

15. For the same in Waldo County. Mrs. A. B. Strattard, Monroe, \$10. [2d and 3d not awarded.]

16. For the same in Washington County. No entry.

17. For the same in York County. No entry.

18. For the best five named varieties of Autumn apples. H. J. A. Simmons, \$3; S. R. Sweetser, \$2; Miss L. L. Taylor, \$1.

19. For the best five named varieties of Winter apples. S. R. Sweetser, \$3; L. H. Blossom, \$2; Nelson Ham, Lewiston, \$1.

20. For the best collection of apples for home use, for the entire year, in the smallest number of varieties. H. J. A. Simmons, \$5; S. R. Sweetser, \$3; S. W. Shaw, Minot, \$2.

21. For the best collection of Crab apples. J. S. Hoxie, \$1; Isaiah Wakefield, Greene, 50c.

SECOND DIVISION.

"Entries for premiums in this division must consist of from five to ten specimens, according to size, of each variety exhibited, and must be separate specimens from any exhibited in the first division."

Number of entries, 622; amount awarded, \$82.75.

22. For the best single variety of Autumn apples. S. R. Sweetser, \$2; H. J. A. Simmons, \$1.

23. For the best single variety of Winter apples. S. R. Sweetser, \$2; H. J. A. Simmons, \$1.

24. For the best dish of Alexander. John Dunton, \$1; Miss L. L. Taylor, 50c.

25. American Golden Russet (*Syn. Sheepnose*). Henry Ingalls, \$1. [2d not awarded].

26. Baldwins. A. E. Andrews, Gardiner, \$1; John Dunton, 50c.

27. Benoni. F. E. Nowell, \$1; S. R. Sweetser, 50c.

28. Black Oxford. L. H. Blossom, \$1; G. W. Blossom, 50c.

29. Blue Pearmain. L. L. Taylor, \$1; Perley & Perkins, 50c.

30. Briggs' Auburn. I. T. Waterman, East Auburn, \$1; L. L. Taylor, 50c.

31. Cole's Quince. J. E. Bennoch, \$1; H. S. Briggs, North Auburn, 50c.

32. Danvers' Sweet. Mrs. M. L. Robbins, Winthrop, \$1; G. B. Sawyer, 50c.

33. Dean. J. S. Hoxie, \$1; Miss L. L. Taylor, 50c.

34. Duchess of Oldenburg. S. R. Sweetser, \$1; John Dunton, 50c.

35. Early Harvest. H. J. A. Simmons, \$1; F. E. Nowell, 50c.

36. Early Strawberry. Moses Crafts, Auburn, \$1; Henry Ingalls, 50c.

37. Fall Harvey. J. J. Towle, \$1; L. L. Taylor, 50c.
38. Fall Pippin. E. A. Lapham, \$1; S. W. Shaw, 50c.
39. Fameuse. C. H. George, \$1; S. W. Shaw, 50c.
40. Franklin Sweet. L. L. Taylor, \$1; G. W. Blossom, 50c.
41. Garden Royal. J. J. Towle, \$1; Perley & Perkins, 50c.
42. Gravenstein. G. W. Blossom, \$1; T. M. Merrill, 50c.
43. Hightop Sweet. J. S. Hoxie, \$1; H. S. Carey, 50c.
44. Hubbardston Nonsuch. E. A. Lapham, \$1; Mrs. M. L. Robbins, 50c.
45. Hunt Russet. H. J. A. Simmons, \$1; Elmas Hoffses, 50c.
46. Jewett's Red. S. R. Sweetser, \$1; Oscar F. Frost, Monmouth, 50c.
47. King of Tompkins County. Isaiah Wakefield, \$1; John Dunton, 50c.
48. King Sweeting. L. L. Taylor, \$1; J. S. Hoxie, 50c.
49. Large Yellow Bough. S. W. Shaw, \$1; S. R. Sweetser, 50c.
50. Minister. G. W. Blossom, \$1; Elmas Hoffses, 50c.
51. Moses Wood. W. R. Wharff, \$1; Perley & Perkins, 50c.
52. Mother. L. L. Taylor, \$1; S. R. Sweetser, 50c.
53. Northern Spy. J. R. Peacock, Gardiner, \$1; W. H. Young, Auburn, 50c.
54. Orange Sweet. J. S. Hoxie, \$1; L. K. Litchfield, Winthrop, 50c.
55. Peck's Pleasant. A. E. Andrews, \$1; J. S. Hoxie, 50c.
56. Pomme Royale. J. Pope & Son, \$1.
57. Porter. S. W. Shaw, \$1; S. R. Sweetser, 50c.
58. President. L. H. Blossom, \$1; B. E. Allen, North Greene, 50c.
59. Primate. L. R. Powers, \$1; H. J. A. Simmons, 50c.
60. Pumpkin Sweet. H. S. Carey, \$1; G. W. Blossom, 50c.
61. Red Astrachan. H. J. A. Simmons, \$1; Mrs. A. B. Strattard, 50c.

62. Red Canada. Nelson Ham, \$1 ; Perley & Perkins, 50c.
63. Red Russet. S. R. Sweetser, \$1 ; Mrs. M. L. Robbins, 50c.
64. Rhode Island Greening. Perley & Perkins, \$1 ; C. H. George, 50c.
65. Rolfe. B. E. Allen, \$1.
66. Roxbury Russet. S. R. Sweetser, \$1 ; J. D. Briggs, 50c.
67. Sops of Wine. L. H. Blossom, \$1 ; H. J. A. Simmons, 50c.
68. Somerset. L. L. Taylor, \$1 ; S. R. Sweetser, 50c.
69. Starkey. G. B. Sawyer, \$1 ; Perley & Perkins, 50c.
70. Talman's Sweet. D. J. Briggs, \$1 ; M. S. Sylvester, Leeds, 50c.
71. Tetofsky. Milton Dyer, \$1.
72. Wagener. N. W. Harris, Auburn, \$1 ; Charles Foss, Turner Centre, 50c.
73. Williams' Favorite. Miss L. L. Taylor, \$1 ; H. J. A. Simmons, 50c.
74. Winthrop Greening. E. A. Lapham, \$1 ; F. E. Nowell, 50c.
75. Yellow Bellflower. R. H. Gardiner, Gardiner, \$1 ; Ivory W. Emerson, Lewiston, 50c.
76. Crab Apples. H. J. A. Simmons, 50c ; Nelson Ham, 25c.

Class 2—PEARS.

Number of entries, 155 ; amount awarded, \$74.25.

“ Entries for premiums Nos. 77, 78, and 79 must consist of five specimens of each variety exhibited.”

77. For best general exhibition of pears. Samuel Rolfe, Portland, \$12 ; L. J. Perkins, Deering, \$8 ; D. P. True, Leeds Centre, \$5 ; J. E. Bennoch, \$3.

78. For best five named varieties of Autumn pears. D. P. True, \$3.

79. For best five named varieties of Winter pears. No entry.

“ Entries for premiums Nos. 80 to 109, inclusive, must consist of five to ten specimens, according to size, of each variety exhibited.”

80. For best single variety of Autumn pears. H. T. Leech, Monmouth, \$2 ; L. K. Litchfield, \$1.

81. For the best single variety of Winter pears. D. P. True, \$2 ; L. K. Litchfield, \$1.

82. For the best dish of Bartlett. J. C. Symmes, Auburn, \$1 ; H. T. Leech, 50c.

83. Belle Lucrative. G. W. Blossom, \$1 ; S. W. Shaw, 50c.

84. Beurre d' Anjou. Israel Mitchell, Lewiston, \$1 ; Henry Ingalls, *Gratuity*, 75c. ; S. W. Shaw, 50c.

85. Beurre Bosc. Henry Ingalls, \$1 ; J. E. Bennoch, 50c.

86. Beurre Hardy. R. H. Gardiner, \$1.

87. Beurre Superfin. D. P. True, \$1 ; Henry Ingalls, 50c.

88. Beurre Clairgeau. D. J. Briggs, \$1 ; G. B. Sawyer, 50c.

89. Beurre Diel. Ivory W. Emerson, \$1 ; D. J. Briggs, 50c.

90. Buffum. D. P. True, \$1 ; Nelson Ham, 50c.

91. Clapp's Favorite. L. R. Powers, \$1 ; H. T. Leech, 50c.

92. Doyenne Boussock. Henry Ingalls, \$1.

93. Duchess d' Angouleme. A. B. Chipman, West Gloucester, \$1 ; D. P. True, 50c.

94. Eastern Belle. Henry McLaughlin, Bangor, \$1.

95. Flemish Beauty. L. K. Litchfield, \$1 ; L. L. Taylor, 50c.

96. Fulton. Wesley Patten, Bowdoinham, \$1.

- 97. Glout Morceau. D. J. Briggs, \$1 ; L. K. Litchfield, 50c.
- 98. Goodale. Henry Ingalls, \$1 ; Perley & Perkins, 50c.
- 99. Howell. Israel Mitchell, \$1 ; Henry Ingalls, 50c.
- 100. Lawrence. C. H. George, \$1 ; S. W. Shaw, 50c.
- 101. Louise Bonne de Jersey. D. P. True, \$1 ; Israel Mitchell, 50c.
- 102. Maria Louise. No entry.
- 103. Nickerson. Perley & Perkins, \$1.
- 104. Seckel. S. W. Shaw, \$1 ; D. J. Briggs, 50c.
- 105. Sheldon. Miss L. L. Taylor, \$1 ; Ivory W. Emerson, 50c.
- 106. Swan's Orange. J. E. Bennoch, \$1.
- 107. Urbaniste. Henry Ingalls, 50c.
- 108. Vicar of Winkfield. A. B. Chipman, \$1 ; D. P. True, 50c.
- 109. Winter Nelis. G. W. Blossom, \$1 ; Henry Ingalls, 50c.

Class 3—GRAPES.

Number of entries, 66 ; amount awarded, \$55.50.

110. For best exhibition of grapes grown with artificial heat. John C. Baker, Lewiston, \$8 ; John Vickery, Auburn, \$5.

111. For best exhibition of grapes grown in cold grapery. G. B. Sawyer, \$8.

112. For best cluster Black Hamburgh, Wilmot's Hamburgh or Victoria Hamburgh, John C. Baker, \$1 ; John Vickery, 50c.

113. White Frontignan. No entry.

114. Grizzly " "

115. White Muscat. J. C. Baker, \$1.

116. Muscat Hamburgh. Not awarded.

117. White Chasselas. G. B. Sawyer, \$1 ; John Vickery, 50c.

118. Lady Downes. No entry.

119. Buchland Sweet-Water. G. B. Sawyer, \$1 ; J. C. Baker, 50c.

120. Trentham Black. No entry.

121. West's St. Peters. No entry.

122. White Nice. J. C. Baker, \$1.
123. Red Chasselas. G. B. Sawyer, \$1.
124. Chasselas Musque. G. B. Sawyer, \$1; J. C. Baker, 50c.
125. For the best exhibition of grapes grown in open air. J. S. Hoxie, \$5; Perley & Perkins, \$3; D. P. True, \$2.
126. Best single variety (open air). Perley & Perkins, \$2. J. S. Hoxie, \$1.
127. Best three bunches Delaware. G. B. Sawyer, \$1; Wesley Blanchard, Lewiston, 50c.
128. Concord. Wesley Blanchard, \$1; Perley & Perkins, 50c.
129. Hartford Prolific. Wesley Blanchard, \$1; Perley & Perkins, 50c.
130. Rebecca. No entry.
131. Allen's Hybrid. J. S. Hoxie, \$1; G. B. Sawyer, 50c.
132. Adirondac. No entry.
133. Creveling. Perley & Perkins, 50c.
134. Massasoit. J. S. Hoxie, \$1; S. W. Shaw, 50c.
135. Wilder. No entry.
136. Lindley. J. S. Hoxie, \$1.
137. Agawam. No entry.
138. Merrimac. No entry.
139. Salem. Wesley Blanchard, \$1; J. S. Hoxie, 50c.
140. Worden. Perley & Perkins, \$1.
141. Brighton. No entry.
142. Pocklington. No entry.
143. Moore's Early. J. S. Hoxie, \$1.

Class 4—PLUMS.

Number of entries, 26 ; amount awarded, \$11.

144. For the best general exhibition of plums, not less than ten varieties. No entry.

“ Entries for premiums Nos. 145 to 164, inclusive, must consist of not less than twelve specimens each.”

145. For best dish of plums of a single variety. Nelson Ham, \$2 ; D. P. True, \$1.

146. For best dish Green Gage. L. R. Powers, \$1.

147. Purple Gage. J. S. Hoxie, \$1.

148. Red Gage. No entry.

149. Yellow Gage. J. S. Hoxie, \$1.

150. Prince Imperial Gage. H. J. A. Simmons, \$1.

151. Coe's Golden Drop. No entry.

152. General Hand. No entry.

153. Yellow Egg. No entry.

154. Lawrence. No entry.

155. Moore's Arctic. No entry.

156. McLaughlin. No entry.

157. Bavay's Green Gage. Nelson Ham, \$1.

158. Lombard. Thomas H. Longley, Lewiston, \$1 ; Moses Crafts, Auburn, 50c.

159. Columbia. No entry.

160. Magnum Bonum. No entry.

161. Washington. No entry.

162. Jefferson. No entry.

163. Penobscot. J. S. Hoxie, \$1.

164. Smith's Orleans. No entry.

Gratuity. Duane's Purple. Mrs. G. W. Bean, Lewiston, 50c.

Class 5—MISCELLANEOUS.

Number of entries, 97; amount awarded, \$37.50.

165. For best dish of peaches. No entry.

166. " " apricots. "

167. " " nectarines. "

168. " " quinces. "

169. " peck cultivated cranberries. Henry Johnson, Turner, \$2.

170. Samples of nursery apple trees. Not awarded.

171. " " pear trees. No entry.

172. " " grape vines. No entry.

173. Best orange tree, in fruit. No entry.

174. " lemon " " "

175. " fig " " "

176. " variety of canned fruits, preserves, pickles, etc., put up and made by the exhibitor. Miss Alice M. Jordan, Auburn, \$3; Mrs. A. C. Pierce, Lewiston, \$2.

177. Best specimen of canned peaches. Mrs. A. C. Pierce, \$1; Alice M. Jordan, 50c.

178. Best specimen of canned plums. Mrs. D. P. True, Leeds Centre, \$1; Mrs. A. C. Pierce, 50c.

179. Best specimen of canned strawberries. Mrs. D. P. True, \$1; Mrs. A. C. Pierce, 50c.

180. Best specimen of canned raspberries. Mrs. A. C. Pierce, \$1; A. B. Chipman, 50c.

181. Best specimen of canned cherries. Mrs. D. P. True, \$1; Mrs. A. C. Pierce, 50c.

182. Best specimen of canned quinces. No entry.

183. " " " tomatoes. Mrs. A. C. Pierce, \$1; A. B. Chipman, 50c.

184. Best specimen of preserved quinces. Alice M. Jordan, 50c.

185. " " " apples. Alice M. Jordan, \$1; Miss Addie L. Lapham, Pittston, 50c.

186. Best specimen of preserved plums. Mrs. D. P. True, \$1.
187. " " " pears. Alice M. Jordan, \$1 ;
Mrs. A. C. Pierce, 50c.

188. Best specimen of preserved strawberries. A. B. Chipman.
\$1 ; Alice M. Jordan, 50c.

189. Best specimen of preserved raspberries. Mrs. A. C. Pierce,
\$1 ; Alice M. Jordan, 50c.

190. Best specimen of preserved currants. Alice M. Jordan, \$1 ;
A. B. Chipman, 50c.

191. Best specimen of preserved cherries. A. B. Chipman, \$1 ;
Mrs. D. P. True, 50c.

192. Best jar assorted pickles. Mrs. E. A. Lapham, Pittston.
\$1 ; Mrs. A. B. Strattard, 50c.

193. Best bottle tomato catsup. Mrs. E. A. Lapham, \$1 ; Alice
M. Jordan, 50c.

194. Best bottle mushroom catsup. No entry.

195. " jar quince jelly. Alice M. Jordan, \$1.

196. " " apple jelly. Mrs. A. C. Pierce, \$1 ; A. B. Chip-
man, 50c.

197. Best jar grape jelly. Mrs. R. M. Jordan, Auburn, \$1 ; Alice
M. Jordan, 50c.

198. Best jar currant jelly. Mrs. A. C. Pierce, \$1 ; A. B. Chip-
man, 50c.

199. Best jar strawberry jelly. Alice M. Jordan, 50c.

200. Best 5 lbs. evaporated apples. J. J. Towle, \$1.

201. " fruit evaporator, in operation. No entry.

Gratuity. For jar of maple syrup. Geo. W. Manter, Oakland.
\$1.

Mr. J. C. Symmes, of Auburn, exhibited very fine specimens of
canned blackberries, corn, beans, tomatoes, squash and pumpkin,
which received the unqualified commendation of the committee.

Class 6—FLOWERS.

"In this class no article can be entered for more than one premium. All plants and flowers entered for premium must be in their places at the exhibition room on the first day of the fair."

FIRST DIVISION.

Number of entries, 33 ; amount awarded, \$49.50.

202. For best display of cut flowers, filling not less than 100 phials. Mrs. G. B. Sawyer, Wiscasset, \$10 ; Mrs. Charles Stanley, Winthrop, \$8 ; Mrs. A. B. Strattard, Monroe, \$5.

203. For best exhibition of roses, not less than five varieties. W. E. Morton & Co., Portland, \$5.

204. Dahlias, not less than ten varieties. Mrs. Charles Stanley, \$2 ; Miss Cora E. Ring, Richmond, \$1.

405. Chinese Pinks. W. E. Morton & Co., 50c.

406. Carnations, not less than five varieties. W. E. Morton & Co., \$2 ; Mrs. A. B. Strattard, \$1.

207. Japan Lilies. W. E. Morton, \$2.

208. Asters, not less than ten varieties. Cora E. Ring, \$1 ; Mrs. G. B. Sawyer, 50c.

209. Pansies. Mrs. A. B. Strattard, \$1 ; Miss L. M. Pope, Manchester, 50c.

210. Zinnias. W. E. Morton & Co., \$1.

211. Phlox Drummondii. Miss Ida M. Litchfield, Winthrop, \$1 ; Mrs. A. B. Strattard, 50c.

212. Stocks. No entry.

213. Balsams. No entry.

214. Chrysanthemums. No entry.

215. Petunias. W. E. Morton & Co., \$1 ; Mrs. Charles Stanley, 50c.

216. Gladiolus. Miss L. M. Pope, \$2 ; Geo. M. Roak, Auburn, \$1.

217. Verbenas. Miss L. M. Pope, \$2 ; Geo. M. Roak, \$1.

SECOND DIVISION.

Number of entries, 26 ; amount awarded, \$31.25.

218. For best pair of parlor bouquets. Mrs. C. Stanley, 50c.

219. Pair wall bouquets. No entry.

220. " hand bouquets. Mrs. C. Stanley, 50c.

221. Floral pillow. W. E. Morton & Co., \$5.

222. " design. W. E. Morton & Co., \$5 ; Mrs. C. Stanley, \$3 ; Geo. M. Roak, \$2.

223. Floral wreath. W. E. Morton & Co., \$2 ; John Burr, Freeport, \$1.

224. Dinner table decoration. Miss L. M. Pope, \$2 ; W. E. Morton & Co., \$1.

225. Basket wild flowers. Miss Edith M. Leavitt, Auburn, \$1 ; Miss Alice M. Jordan, 50c.

226. Dried grasses. Mrs. C. Stanley, \$2.

227. Everlasting flowers. Mrs. A. B. Strattard, \$1.

228. Dish cut flowers. Miss I. M. Litchfield, \$1.

229. Fancy basket of flowers. W. E. Morton & Co., \$2 ; G. M. Roak, \$1 ; John Burr, 75c.

THIRD DIVISION.

Number of entries, 28 ; amount awarded, \$34.75.

230. For best exhibition of greenhouse plants. G. M. Roak, \$8 ; John Burr, \$5.

231. For best exhibition of pot plants, not less than 20 pots. No entry.

" Persons exhibiting greenhouse plants (No. 230), cannot compete for premium No. 231."

232. For best exhibition of ferns. G. M. Roak, \$3 ; John Burr, \$2.

233. Geraniums. G. M. Roak, \$2 ; John Burr, 1.

234. Begonias. G. M. Roak, \$2 ; John Burr, \$1.

235. Coleus. John Burr, \$2 ; G. M. Roak, \$1.

236. Best specimen plant of Tuberose. G. M. Roak, 50c. ; John Burr, 25c.

237. Best specimen plant of *Dracæna*. John Burr, 50c. ; G. M. Roak, 25c.

238. Best specimen plant of Double Geranium. G. M. Roak, 50c. ; Miss E. M. Leavitt, 25c.

239. Best specimen plant of Single Geranium. No entry.

240. “ “ *Salvia Splendens*. G. M. Roak, 50c. ; John Burr, 25c.

241. Best specimen plant of Foliage Begonia. John Burr, 50c. ; G. M. Roak, 25c.

242. Best specimen plant of Flowering Begonia. John Burr, 50c. ; G. M. Roak, 25c.

243. Best specimen plant of *Coleus*. G. M. Roak, 50c. ; John Burr, 25c.

244. Best specimen plant of *Fuchsia*. G. M. Roak, 50c.

245. “ “ Carnation. G. M. Roak, 50c.

246. For best single pot plant. Miss Lou Maxwell, Lewiston, \$1 ; G. M. Roak, 50c.

247. Best hanging basket with plants. No entry.

248. Best climbing plant, on trellis. No entry.

249. Wardian case. No entry.

250. Rustic stand, not less than three feet in height, filled with choice plants. No entry.

Proceedings of the Winter Meeting.

The annual Winter Meeting of the Maine State Pomological Society was held at Gardiner, in the new Library Hall, on the 24th and 25th days of February, 1885. Two sessions were held on the first day (afternoon and evening), the forenoon having been spent in arranging the exhibition of fruit: and three sessions on the second day.

The exhibition was satisfactory in respect to the number of entries and of varieties exhibited, and especially gratifying on account of the uniform excellence of the specimens. Further particulars in regard to it will be found in the report of the committee at a later stage of the proceedings.

FIRST DAY—AFTERNOON SESSION.

The Society met at two o'clock in the afternoon, and was called to order by the President. O. B. CLASON, Esq., of Gardiner, in a brief address, welcomed the Society to the city, and was replied to in behalf of the Society by the Secretary, and the President delivered his annual address.

ADDRESS OF WELCOME.

By O. B. CLASON, Esq., of Gardiner.

Mr. President, and Members of the Maine State Pomological Society:—The absence of our Mayor from the State affords me the pleasure of welcoming you to this city, named in honor of the father of one of the recent presidents of this Society. Several of your most active members are among our prominent citizens, and the fact that they are so closely identified with this exhibition here to-day is a sufficient guaranty of the usefulness and practicability of this Society in advancing the fruit-growing interests of our State. The soil of the Kennebec valley is fertile and well adapted to fruit culture; yet, ride in any direction from this city but a few miles and you will find instances of orchards allowed to go to decay, with

scarcely an effort being made to keep them in bearing condition. Why is this? Is it because orcharding does not pay? Probably it does not to them. What is the answer? It occurs to me that it is because of ignorance or carelessness of the farmer, perhaps in the selection of varieties adapted to the soil, but more especially in bestowing upon the orchards proper care. The trees of the forest grow, and why should not the trees of the orchard? they may reason. Pruning and mulching are rarely resorted to; the result is fruit inferior in quality and quantity, and ill-shapen trees. This ignorance, if you choose so to call it, can only be remedied by educating the farmer in the practical methods of caring for his orchards. This cannot be done by theoretical treatises, for they will not be read, much less practiced; but it can be accomplished by just such exhibitions as you have here today; by seeing the fine display of fruit upon these tables; by conversing with the active members of this Society, and especially by listening to the good, practical, common sense essays, that, I doubt not, will be read before this meeting. I hope means will be provided to enable the history of your proceedings to be scattered all over our State, that all interested in fruit culture may have the benefit of your wisdom.

Again, Mr. President, for what your Society has done in the past, for what it is now doing, and for what it proposes to do, I cordially welcome you to this city, and hope your stay will be pleasant and profitable.

The SECRETARY responded as follows:

Having been designated by the President to reply, in behalf of this Society, to the cordial welcome which has been extended to it by the gentleman who has addressed us in behalf of the government and citizens of Gardiner, allow me to say that in accepting the invitation the Society feels itself not only highly honored by the complimentary terms in which it is expressed, but grateful, also, for so kindly a reception as we have met. We are not strangers to the people of Gardiner; we remember that a little more than four years ago, we held in this city one of our most successful annual exhibitions; and that on another occasion, we held here a winter meeting, similar to this, which was highly satisfactory in its character and results. The pleasant recollections of these two occasions linger in our memories; the goodly number of citizens who are or have been members of the Society affords another bond of sympathy, and we come back to this busy and beautiful city almost with a feeling

that it is our home. It is not necessary, therefore, that I should say much at this time in regard to our Society and its general purposes.

We meet here again, as we have done before, to exhibit the productions of our orchards and gardens (so far as we can at this season of the year), to talk over our experiences, to see what we can learn from each other,—what lessons of practical wisdom in fruit culture can be drawn from the results of the operations of the year, and to do what we can, by this public meeting and the publication of its proceedings, to advance the material interests of our State.

There is a special propriety in the selection of this city as the place of our meeting. Its people are hospitable, its facilities ample, and its location favorable; but still more so because it is the centre of a community in which the special interest represented by this Society has long been prominent. It is remembered by some of us that there was held in this city, about thirty years ago, the first State horticultural exhibition in Maine, by a Society organized in this county, but embracing the whole State, and with objects similar to those of this Society; and that in this immediate vicinity, favored in soil, situation and climate, fruit culture has, from the earliest period of its history, ranked among the foremost employments of an intelligent and prosperous population.

Again thanking the citizens of Gardiner for their kindly welcome, we invite them to participate with us in the deliberations of our meeting, and hope the occasion may be mutually beneficial.

OPENING ADDRESS OF THE PRESIDENT,

CHARLES S. POPE, of Manchester.

Ladies and Gentlemen: The few remarks which I have to make at this time will be mostly in the form of suggestions or queries.

It seems fitting at the close of the year to take a retrospect of our doings, and consider what plans may enhance our future usefulness.

Thirteen years ago a few of the fruit growers of this State met and organized this Society. Have their hopes been realized? Let the increased interest in fruit culture in all parts of our State answer. Not only has the apple product increased wonderfully during that period, but the smaller fruits have won a place in nearly every garden, and have become a source of profit to many of our people.

Has the Society finished her work, and is there no further need for organized effort? It seems to me that we are just beginning, and need now, more than ever, these meetings, to discuss the result of our labors, and learn from the success or failure of others. Especially do we need them for mutual encouragement, when, as at present, every one is complaining of "hard times," that our courage may be renewed by the enthusiasm of the more hopeful, and our confidence strengthened by the success of their ventures.

There is much to be done in the matter of nomenclature. Thousands of dollars are wasted every year in putting out spurious, and even utterly worthless varieties of fruit, through the misrepresentations of agents, the mistakes of nurserymen, and the ignorance of varieties among the planters themselves. The exhibitions of this Society have done much to correct this last trouble, and I believe we should do more to expose the wiles of the dishonest tree peddler—that enemy of the fruit grower—who does not, like the borer and codling moth, lie dormant during the reign of frost and snow. It is so easy to be persuaded by the glowing descriptions, and still more glowing colored plates with which the smooth tongued fraternity are provided, that the honest, unsuspecting farmer needs frequently to be reminded that a man of practical experience in orcharding is a much safer guide as to varieties, best in themselves and best suited to his location and requirements, than is the wily agent who makes his largest profits on new and untried varieties, and whose interest it therefore is to recommend them, in preference to the old and reliable standards.

A matter of great importance to the fruit grower of the present day, is the better care of his orchard. Trees are allowed to struggle for existence, which, enriched, and with a little extra care, would pay a large per cent on the investment. With such attention and thoroughness in cultivation, we secure larger, finer fruit, which will meet with a ready sale, at remunerative prices, even in a year of plenty, when inferior fruit will hardly pay the expense of picking and marketing.

We need a reform in the matter of sorting and packing our fruit for market, that shall give us such a reputation as to enable us to command better prices. This is especially desirable in a year like this, when our apples are nearly all sent to foreign markets. Too frequently the orchardist, in his greed for present gain, forgets that his reputation is at stake, and allows his apples to grade from No. 1,

at the ends of the barrel, to No. 3, in the centre. Dealers in fruit are somewhat to blame in this matter, in not making more difference in price between strictly fine and poorly sorted fruit. They should also oblige the grower to brand his package, and when poor fruit is found the blame could be placed where it belongs. In many cases the buyer does the sorting, and not wishing to give offence, hoping to buy another year, will not insist on the requisite thoroughness.

With another season of abundance, we hear the cry of "over-production"—"orcharding does not pay." Notwithstanding this complaint (with which we have been familiar for the last twenty years), we claim that we can compete successfully with any section of this country. Our climate enables us to raise apples that will keep firm and bright until spring, and therefore are valuable for shipping, after the more perishable western-grown fruit is out of the market. Maine Baldwins are selling at the present time, in Liverpool, higher than those from any other section. This, with our proximity to shipping points, and comparatively low freights, gives us an advantage possessed by few States in the Union.

A few years ago Michigan apple growers were despondent, and thousands of bushels rotted on the ground—this, too, at a time when American apples were selling in London for 20 to 26 shillings sterling. Choice winter apples were sold last fall in some towns in Central New York for $12\frac{1}{2}$ cents per bushel on the trees. In both cases, distance from market and impossibility of keeping late are responsible in part for such loss. Can any one point to the time when good winter fruit, hand picked and well packed, would not sell for a remunerative price in Maine? When we compare the price of land here, where some of the best orchard land is almost worthless for any other purpose, with the value in some of the best fruit sections of the country, where land is worth from \$75 to \$200 per acre, together with the other advantages enumerated, is it not at once apparent that Maine ought to raise ten barrels of apples where she now raises one? Another question which arises in connection with the subject, is the practicability of keeping our apples until the glut in the market is over. The loss from shrinkage and decay is frequently so great as to discourage growers, and many apples are crowded upon the market at very low prices, which could be sold to much better advantage in the winter or spring. We think there would be no difficulty in keeping apples, if the cellar were kept at a low, even temperature, about 32° to 35° F., and they were stored in open bins.

This may not always be feasible in the house cellar, in which case a cellar may be dug under the barn, or outside, like a celery pit.

In conversation with one of our leading fruit growers, a few days since, he related his experience in keeping apples in barrels and in open bins in the cellar. There was a loss by decay of 15 per cent in the apples barrelled, while those in the bins were perfectly sound and bright. He urged us to bring this before the people, as it would be of great importance to those storing apples.

I would suggest for your consideration, the feasibility of teaching some of the principles of horticulture in our public schools, as comparatively few of our boys can attend the Industrial College. The tendency of the times is to teach those subjects which will be of practical advantage in business. The different branches of fruit growing and gardening are good trades in themselves, and it would be pleasant for men in almost any business to know something about the culture of fruits, vegetables and flowers. How to sow seed, to transplant, to graft, bud and prune; to make hot beds and propagating houses. Could we get our boys interested in some of these things, perhaps there would be more love for the farm and less eagerness to rush off to the city, or to some distant State, on attaining majority. I would suggest that the best way to accomplish this would be to begin with some plain lectures on the subject before the school. An interest in these things once aroused in the mind of an intelligent boy, and all nature is full of object lessons for his special delight and instruction.

One more question, and a most important one: How can we interest more of the fruit growers, so that they will join with us and assist in building up the Society and extending its influence for further good? You must be aware that comparatively few of our large fruit growers are actively interested in the work of the Society. They may be in sympathy with us, but do not see the importance of meeting together. Nearly every one of these has some specialty in which he excels, and he knows some things about it that others do not, which he ought to contribute to the general fund of information, and at the same time he can reap the benefits of others' experience. One of the best things accomplished by the Society is the bringing together of inquirers and men of experience.

Often, men who cannot or will not embody their ideas in print have a large fund of information which may be elicited by careful questioning. It is not enough that a few of us meet from year to

year for mutual exchange of opinion and discussion; some way should be devised for bringing the Society into nearer relation to the masses of the people. I do not propose a remedy for this, but leave it, with the other topics presented, for your consideration, not doubting that your combined wisdom will be equal to the emergency.

The President's address was referred to a committee, consisting of Messrs. R. H. Gardiner, S. R. Sweetser and Orrin McFadden, with instructions to consider the same and report such action as they deem proper on the several subjects therein mentioned.

Messrs. S. R. Sweetser, Levi Russell and J. M. Carpenter, were appointed a committee to examine the fruit exhibited at this meeting, and report thereon.

The following paper was read, in the absence of the writer, by J. M. Larrabee, Esq., of Gardiner:

OBSERVATIONS ON FRUIT CULTURE IN MAINE.

By J. W. LANG, of Bowdoinham.

Orcharding is a vast subject, and one which, as a whole, could receive but a cursory glance in the limited time assigned to this paper. Without attempting even an outline of the whole, I shall endeavor to present a few important points in a practical manner.

The soil is the source from which plants derive their chief support. It is something more than a mere pedestal for plants and trees to stand upon. It is a supporter in several senses; it supports in the sense of holding up; in the sense of maintaining and feeding; in the sense of secreting, supplying and keeping reserve force. It contains the power of co-operating with the tree or plant in transforming itself, inert and useless otherwise, into active and useful forms. The soil is the first field for operation in fruit culture. It is also the last that can safely be neglected. It is the last to fail if intelligently handled. Any well-drained soil is good for apple trees, or other fruit trees. Well drained, not only naturally but artificially except in those soils where nature has, in fitting them expressly for fruit trees, spoiled them for almost anything else. A porous subsoil or well-laid underdrains are demanded. But we must not stop at well underdraining, for the soil should be further fitted for parting with surplus water by thorough pulverization; and kept so by judicious mulching. The soil must be prepared thus for the escape of water and the entrance of air. It is then ready to be fer-

tilized. In manuring fruit trees, many pile the manure about the trunk, as though it was a house to be protected from frost or a post to be braced. The rule should be to fertilize and mulch the *land* instead of the tree. If there is food for the roots in the soil, they will find it. If it is piled about or near the trunk it is practically out of their reach.

In setting trees on underdrained land, I should prefer to set them immediately over the drains, so far as practicable; for this would give the tree the best possible position for drainage, and the extending roots would be away from, instead of toward the drain. If the land was being drained for an intended orchard, I would fill the drains partially in the fall, and in the succeeding spring set the trees over the drains, as the filling went on. This would save labor in the setting.

It is difficult to cultivate an orchard set in the usual way without injury to the trees from the team or implements. I am inclined to believe, both from observation and experience, that it is better to set trees in long rows—quite thickly in the row, with wide spaces between the rows. If set 12 to 20 feet apart, and the rows four rods distant from each other, it will be found more convenient in working among them with plow, mower or rake, or in carting either fertilizers or fruit. On many farms, sufficient orcharding may be had by setting rows of trees by the roadside and along permanent fences. It has been found that trees do particularly well beside fences, especially stone walls. This arises in part from the partial mulch which the fence affords, and in part from the deeper and longer retention of snow. They are practically out of the way of the plow, or other farm machinery. It may be suggested that many apples would be injured by falling on the rocks or rails of the fence. But this is really small objection if the fruit is poor, and still smaller if good, for then hand picking, the only right way to gather fruit of value, would be the more imperatively required.

We have seen many good orchards set and grown in gulches, on steep hillsides, and other waste places. We have also seen hundreds of other similarly good locations naturally that are as yet unutilized. Here is a hint to many. Trees on such grounds may be set irregularly, and in the most convenient places, and set thickly. The touching of limbs here affords support and shade, and the benefits of a partial mulch. The sharp slope or rocky nature of such lands affords a natural drainage, and imparts a ruggedness and

hardiness that often gives peculiar thrift to the trees. We believe there are sufficient waste places, and caves, and nooks in the State to put all the existing orchards and fruit trees into—out of the way, if the expression is allowable—and to their improvement as a whole. If this idea is true, think you for a moment of the vast unutilized resources for orcharding we have that we have scarcely begun to appreciate, and that but few have ever seriously considered.

Sandy soil is not generally considered good for orcharding, but we have seen many very good orchards on sandy loams, and no one need hesitate or despair of having an orchard because of this. Thrifty trees, well set (and somewhat deeper than in heavier soils), liberally mulched with muck and ashes, and the whole soil well supplied with coarsely ground bone worked in evenly several inches deep, will give a good growth and make healthy trees. If such soils have their *outs*, they have their compensations. They are well drained naturally, easy of cultivation, and generally “lay well.” They also afford poor shelter to insects.

The lighter clay loams are fair orchard lands, especially along the borders where they shoal to meet rocky ridges or lap on to gravel loam. We have seen many good orchards on such land, and hope more attention is to be given them in the future. They should be carefully drained, if at all needing it. They are strong retention soils, holding fertilizers well and requiring but light mulching. Much of this class of land is underlaid by a porous or partially porous subsoil. Pear trees are particularly at home on clay loams. The Red Astrachan is one of the varieties of apples that does well on a heavy clay loam. The Yellow Bellflower is another.

We have especially spoken of the two extremes of soil—sandy loam and clay loam—to show that orchards may be raised profitably on them, and to encourage those having such soils to try. It requires more care and skill, but success is often all the more marked in the end, where harder to obtain. On other rocky, gravel loams, where trees come on almost by themselves, and the fields and pastures have strong, vigorous volunteers, orcharding may be pursued as a specialty and to a large extent. No section of our State is destitute of much land of this kind. It is on these we expect to see orcharding have its widest expansion. Growing Baldwin apples in Maine is as promising in outlook and paying in returns as growing oranges in Florida, and not attended by half the privations and disadvantages. We hope citizens of Maine will learn this fact in the

near future ; and not only learn it, but learn to accept it and practice it.

If there is one point in fruit culture that needs impressing more than any other, it is that of fertilizing. More orchards are starved to-day than are well fed. More poor apples than good are produced, and largely for the want of manuring. It is a thing we should dwell upon. Too many orchards get no plant food except what they forage. Too many people give what little dressing they apply to the orchard grudgingly. If orcharding is worth pursuing at all, it is business to work it for all it is worth. The quicker young trees are grown, the less time the borer and the caterpillar, the woodpecker and the canker worm have to work on them. The sooner they are driven to bearing size, the sooner the investment will pay.

Fred W. Ritchie, of Winterport, a successful orchardist, says : "I cannot raise such apples as the market demands, such as will bring the highest price, and such as I want, without liberal manuring and cultivating. I should as soon think of raising good corn without cultivation and close attention, as good crops of apples." We might glance over the State and present a long list of names of successful orchardists, and not one would present an example of success without effort.

[The writer here mentioned numerous instances of the successful cultivation of orchards, in various sections of the State, showing the practical benefits of high cultivation.]

The lesson is : The tree that has the most and best plant food at its disposal, succeeds best.

The hardier and earlier varieties of grapes can be grown with little care and attention, and as successfully as an apple tree. They ought to be produced in abundance on every farm. They require but small space ; and, grown about the dooryards or the buildings, are ornamental as well as useful. Change Scripture a little to suit the climate, and with a little effort, all may sit beneath their own vine and apple tree.

The subject of fruit growing is receiving increased attention in Maine. At no previous time in the history of the State has so much attention been given to planting of new orchards, or to the intelligent care of those already existing, as during the few past years. Apples in our local markets are often scarce and high. Discussions

of horticultural methods and practices are pursued with more interest than formerly. Results are more narrowly watched. Experience is carefully sought to guide the amateur.

The great central and southern belts of the State, more especially west of the Penobscot river, are finely adapted to apple growing. The western and northwestern sections will produce Baldwins hard and firm almost as the rocks they grow among. Even the northeastern portion produces good apples of the very hardest or "iron-clad" varieties. Aroostook is as yet by no means to be given over as a hopeless fruit section. In its borders plums are particularly free from insect enemies. Pears grow finely on our clay loams, and are thriftiest and most productive near bodies of water. Maine apples have long keeping qualities, are hard and firm and bear long transportation well. There is a tendency to grow fewer varieties and larger quantities of standard sorts; especially those which from experience have proved adapted to our wants, are good keepers and staple in the markets.

The future of Maine fruit growing is, we trust, to be a bright one. The increased attention which it receives seems to warrant the prediction. Not only are more and more apple trees set each year, but small fruits are receiving attention also. Although there is much of improvement to be made, yet the beginning is so far good. Strawberries are receiving attention. Demand far exceeds supply. Our strawberries, coming into the market late and in good condition, bring a good price. Late supplies of this delicious berry often bring as good prices as the earlier ones from more southern States. Cranberries are the natural product of many bogs and lowlands, and are cultivated with profit in parts of the State. Cherries and plums are considerably grown in spite of black knot and curculio. Peaches are produced in favored places in quantities sufficient to be a market crop. Grape culture is on the increase. Raspberries and blackberries are not much cultivated, the wild product being as yet too plentiful. But they will soon command attention. The gooseberry and currant have not yet recovered their former importance since the advent of the currant worm.

The State Pomological Society is doing a good work. Its annual meetings, exhibitions and reports are valuable. It exerts a marked influence on the fruit interests of the State. A good society is a power for good. The power of organization is mighty in results. It is helping set Maine along the tide of progress to be one of the

best fruit States of the near future. Its work should be appreciated and sustained.

None are too old to plant trees. The grandsire may outlive the grandson. It is a beautiful thought that we may leave a legacy of beneficial fruit trees behind us; that they may wave their green and golden benedictions over our graves, and over the old homesteads long after we are known on earth no more.

If such lands, in quality, price, contiguity to all that blesses life in our own New England, lay in Florida, California, or the far west, it would only be necessary to advertise them liberally to draw their present inhabitants, almost by an exodus, to their land of promise. It is said familiarity breeds contempt. The fairest portions of the earth are inhabited by the most indolent and inappreciative people. Shall we, here in this good old State of Maine, close our eyes to the wealth beneath our feet or the beauty over our heads? Shall we go to miasmatic Florida, the cyclone swept west, the arid lands of the Pacific slope, to raise fruit we can equal at far less expense? God forbid!

The introduction of establishments for, and the practice of, evaporating apples is adding much to the revenue hitherto derived from our orchards. The product is enhanced in value one hundred per cent, and not only this in both price and quality, but a class of apples hardly salable before, comes into demand. It opens up encouraging prospects for raising those kinds of apples that are hardy, prolific, and of low value for dessert. The evaporating business has obtained such a foothold, and been such a success where tried, that we may reasonably regard it as one of those innovations that are improvements, and that has come to stay. There is little danger that the markets will be overstocked with a good product, and should such an event occur, it is not likely to be of long duration. It is wise policy to encourage good evaporating operations in our midst.

Living here, pleasantly situated amid all that makes life desirable, surrounded by all the facilities the temperate zone affords, or the others contribute, in quick and easy communication with all the world, with the best of markets at our very doors, why shall we not thank God and take courage in the production of more and better fruit year by year? It would seem to be flying in the face of a most kind and beneficent Providence not to do so. No branch of the old home farm has more of promise or of profit in it. The

village plot is not excluded. The hill-side and the valley are competitors. Women and children may engage in it. There is much that fits the kindly touch of the hands of the gentler sex in it. Its pursuit doubles and quadruples the value of the lands on which it is pursued. It beautifies and elevates the home, and refines the character.

“Better than gold is a peaceful home,
Where all the fireside charities come—
The shrine of love—the heaven of life,
Hallowed by mother, or sister, or wife.
However humble the home may be,
Or tried by sorrow by heaven’s decree,
The blessings that never were bought or sold,
And center there, are better than gold.”

DISCUSSION.

THE SECRETARY. I object to the recommendation in the excellent paper which has been read, of setting trees directly over the drains, and especially to doing this at the time of filling the drains. Drains, in a soil which needs underdraining, will, during a large portion of the year, contain water, and always moisture. The roots of trees seek moisture, and if placed directly over the drains, will extend downward into the drains, instead of “away from them.” The choking of drains by roots is a fact of frequent occurrence, and when a drain needs repairing it will be impossible to uncover it with a row of trees standing over it. On the other hand, if the drains are placed midway between the rows, they will tend to draw the roots to the greatest possible distance, will be for a long time free from the danger of choking, and can be uncovered for repairs without destroying the trees.

The recommendation to plant trees in “out of the way places,” if intended as a general rule, does not meet my approval. A good orchard, designed to be a permanent source of profit and pleasure, will not be “in the way,” in an offensive sense, if given the best and most convenient location which the farm affords.

The writer has not over-stated the importance of high cultivation, or of intelligent and constant care in the growth of an orchard. Too much importance cannot be attached to the subject of producing a vigorous growth and early development of the trees, or keeping up the fertility of the soil.

EX-PRESIDENT GARDINER. About planting trees over drains—I would like to speak of an incident that happened at Oakland some years ago, which bears out Mr. Sawyer's objections. In those days, before we knew much about drains or drain pipe, it was almost universal to use logs; and all the water that came to the house and barns was brought in logs through the old orchard. On one occasion I remember that the water supply began to fail, gradually growing less and less. It was a long time before the cause was discovered, but at last, by digging down to the drain, it was found that an apple tree root had grown down and found a knot-hole in the log, and had gone in through it, and had grown so large as to stop the flow of the water. It merely shows that the inclination of the roots of trees is to find water. If a tree is planted over a drain the roots will find their way into the drain and fill it up. It is a very remarkable fact that roots will always go to find water.

D. J. BRIGGS. I merely rise to state a fact from my own experience in regard to setting trees on drains. I have one small apple orchard in which a part of the trees are set over the drains, and those trees that are set between the drains are as hardy, as productive and as large as those on the drains.

Another point in the paper which has been read is in regard to the production of grapes in this State. I think that the subject of grape culture should not be brought forward as a matter of general interest in a pecuniary point of view. It may be discussed in farmers' clubs, but we know that we cannot as a general thing produce grapes in this State profitably, because there are other localities that produce them more easily and more abundantly, and get them into market before we can.

One point in respect to what the president said in regard to apples, that ten barrels should be grown where there is now one. A neighbor said to me this winter "if all the trees bear where apples can be grown, it will be the best farming we can do, at \$1.25 per barrel from the orchard." I heard of none being sold for less than that price last fall; yet without putting them into the cellar this is better farming than anything else we can do. I believe instead of raising one hundred barrels of Baldwins as I did, it would have been better if I had had a thousand barrels. I believe the more good fruit we can raise, the better the market will be. I have repeatedly said this to this Society, and I still adhere to it.

Another point in Mr. Lang's paper in regard to raising the standard varieties ; I don't believe in raising all standard varieties. We see in the English reports, that fancy varieties brought very high prices. For instance: The Fameuse, Gravenstein, and King of Tompkins County.

I believe that if a young man is going into orcharding, he should look at the nearest orchard he can find that has been productive, and see if the soil is similar to his ; if so, follow the example. In the vicinity where I live, I can raise russets quite well ; a hundred rods south of me they cannot raise them with any profit. Mr. Gardiner will raise Bellflowers, but I have discarded them. I have tried for the last ten years to raise them, without success.

There is another point—that a person will set out an orchard, perhaps well, and think the work is all done, when it is only the commencement. It is work all the way through—eternal vigilance. We must raise better fruit to compete with other sections. We have to fight our enemies—we have to feed ourselves. We have got to feed our trees also. The question will arise, What shall we feed them with? I feed mine largely on potash. I buy ashes and spread them broadcast in the orchard. I advocate, in planting corn, to plant *corn*, and not beans or pumpkins. I don't believe you can profitably plant an orchard with other crops.

The first animals that I turn into my orchard in the spring are sheep and hens. When the sheep commence gnawing the foliage and shaking the limbs, they are taken out, and pigs are put in. These are kept there till the apples become fit for making cider, then these are taken out, but the hens continue to run there. I believe the hens are a source of income, and that they pay for all the apples they devour.

W. P. ATHERTON. I rise to speak of some points in the paper which has been read. One is in regard to setting young trees over drains. I drained a piece of land, one-half acre in extent, and instead of setting trees over the drain, I set them between, thinking it the better course. My idea was, and is, that the roots of apple trees are reaching out for moisture, and they must have it ; and if you put the trees over a drain, the natural tendency of the roots will be towards the drain and into it. If any one is thinking of underdraining and setting out trees, avoid setting the trees over the drains.

One other point I wish to emphasize, in regard to setting apple trees in "out of the way" places. My experience tends in a different direction. I want my trees where I can give them the best culture and attention; not in a poor, out of the way corner. There seems to be something contradictory in the paper. The writer advocates getting all that we can out of the apple tree while young; to drive the tree to its full growing capacity. I think it is impossible to force a young tree into bearing while young, and at the same time make it develop in growth. My idea is that if you drive a tree you will stunt its growth, therefore I would not advocate it; but it all depends upon circumstances. If you are setting a variety of fruit from which you wish to derive the greatest profit, and don't care so much for growth, I would say set the trees close and feed them high while young. That may be poor advice in some cases, it would be so in regard to the Rhode Island Greening, Northern Spy and Talman's Sweet. I should prefer to get a full growth and let the trees become somewhat mature. I know of a man who was getting all he could from his trees while young, and had four acres of trees set half a rod apart, making six hundred and forty trees to the acre. That was extremely close. They were the Duchess of Oldenburgh. Some of them were as large as a man's arm, and the tops had begun to come together somewhat. I asked him what he was going to do, as I believed he could not get them to grow and become mature. He said he did not care so much about that, he should cut out some of them. With that variety, and perhaps some others, it would do very well. There is the Wagener, if I had a hundred trees of that variety, I would set them close together. I don't believe in keeping sheep in the orchard, but circumstances alter cases. Top dressing is better than keeping sheep, for me.

MR. GARDINER. I noticed in the paper by Mr. Lang, an allusion to the woodpecker as an enemy to fruit culture. I would like to hear about it. Some say they are useful in destroying insects, and some that they suck the sap from the trees.

MISS ALICE FOSTER. I have an apple tree which is completely girdled by woodpeckers. The holes are not more than a quarter of an inch apart in limbs ten inches through, and the tree is certainly ruined. I think they come for the sap. I think the tree is fifty years old. It is gradually dying.

S. R. SWEETSER. I have an impression that there are several kinds of woodpeckers, and that the one we call the sap sucker is

injurious to trees. I have watched them. They appear as though they were sucking the sap. I have noticed them in the fall, as a general thing.

Mr. SAWYER. Is it not, in fact, in the fall and winter that you see them most frequently?

Mr. SWEETSER. I think so.

Miss FOSTER. I have seen young trees where the woodpeckers have bored into them so as to stop the sap from flowing.

L. F. ABBOTT. In regard to the time that the woodpeckers come, I should say in October. I have seen them on trees at that season. One fine tree that I had, about four inches in diameter, was entirely spoiled by them. That was done in October.

J. M. CARPENTER. Do you understand that the number of trees in this State that are destroyed in this way is very large? It appears to me that if we have no worse enemies to contend with than this one, we should get along well enough. I have yet to learn that much damage is done by them.

I would say in regard to the matter of drains, that a member of our family came into possession of a farm where the drain was choked that ran from the cellar through the orchard; it was made of logs. Soon after, we found it choked, we dug down to relieve the cellar from the water, and we found the very place where the roots of the trees had gone into the drain and had blocked it up entirely, so that it was a curiosity. We had to cut them away with axes. It proves that the tendency of roots is to go towards the water, and I should think it would be an unwise thing to do, to put trees on top of a drain. I am sure I should put the trees between the drains, rather than upon them.

Mr. BRIGGS. I want to say, in regard to planting trees in out of the way places, that I believe in taking the best land on the farm and nearest the buildings. While land is cheap, it would be well enough to set trees forty or fifty feet apart, in out of the way places; but where land is in good condition, put them closer. I have set my orchard too thick; one small orchard has one tree to the square rod, but from twenty-three to twenty-five feet apart is better.

There is another point I want to speak of, in regard to trees cracking in the spring, after the sap begins to flow. I cannot think of any reason but the expansion of the wood by freezing. I would like to know if any other orchardists experience the same trouble.

MR. GARDINER. I remember, a good many years ago, after the cold weather had began, there came some warm weather, then it became cold again and I lost a great many trees. I attributed it to the warm weather which had started the sap, and the sudden freezing afterwards, causing a sudden expansion and contraction. I lost many Baldwins at that time.

MR. SAWYER. I would like to ask Mr. Briggs if he ever saw the bark cracked on a tree that had all its branches down to the ground—had not been trimmed up?

MR. BRIGGS. Yes, sometimes. I noticed it on some that were particularly thrifty.

MR. SAWYER. I have in mind some trees that never were trimmed. They are trees of considerable height, with very large tops; but the branches start very near the ground, so that there is no place where the sun can shine on the trunks. The bark on these trees is green and smooth, except as it becomes thickened in the process of nature, when it falls off in flakes or scales, and never cracks. Now I believe the cracking results from the unnatural condition which we produce by this high pruning. I have found that by slitting the bark the entire length of the trunk, so as to give room for the expansion of the tree, the splitting or cracking of the bark is prevented. A clean cut through the bark, made with a sharp knife, will heal in one season, and the width of the scar will show very nearly the increase in the circumference of the trunk. The tree, when the sap starts, must expand. If it has an unnaturally hardened and rigid bark around it, something must burst or the tree cannot expand. I think that is all there is to it. If you slit the bark of a hide bound tree in that way, you will see no bursting, and the tree will grow much better for it.

MR. L. H. BLOSSOM. Would you advocate splitting the bark?

MR. SAWYER. Not unless I saw some necessity for it. I think you can tell by the appearance of the bark of the tree whether it is in such a condition that it needs to be relieved, and I think it is safe to say it will do no harm, if your tree has reached that size where there is a possibility of its bursting.

MR. BLOSSOM. Will it make any difference on which side?

MR. SAWYER. I think not. If you split the bark in the spring, you will find in the fall a wide scar or seam, proportionate to the size and vigor of the tree, and inside of that space there will be a new bark.

Mr. BLOSSOM. I have been troubled, as Mr. Briggs has, with the bark bursting. I have lost quite a number of trees in this way. The bark seems to dry right on to the tree, and after a while this part will all peel off.

Mr. E. A. LAPHAM. Sometimes on my trees the bark dies on the north side, sometimes on the south. Sometimes I have taken a knife and cut around it, and the rest of the bark seemed good then.

Mr. CAREY. In regard to trimming the apple trees, I have in the last year made a practice of cutting through the bark on the body of my trees, and I have noticed that many of them have grown more since I have split them; and I think it is a good plan, especially with a young tree and perhaps in some older ones.

Miss FOSTER. My Baldwins particularly, have troubled me by splitting.

Mr. BRIGGS. At what time of the year?

Miss FOSTER. In the spring.

Mr. BRIGGS. I have had but little trouble with the bark bursting. That fall when we had a very heavy frost I noticed three or four trees where the bark, a little way from the ground, had burst. One tree was a Porter, another a Red Astrachan, and one a Baldwin. These cracks were not on any particular side of the tree. Had I gone right then and bound them up with clay, or something else, instead of waiting till spring, it would have been better. If I should ever notice anything of that kind again, I should attend to it immediately and bind it up, and then I should save it. I don't know what the cause was unless it was too rapid growth. I have had some trouble with young trees which would all dry up. I don't know whether it was on account of the mulching. I believe the sun is an aider and abettor of our work. There is a great deal of power in the sun, in helping to strengthen the bark. I believe we should not put the mulching too close to the trunk. I would like to hear what the President's experience is.

The PRESIDENT. My only trouble has been with the Gravenstein. Several people have made complaint that in the spring the bark would split entirely around the tree.

Mr. BRIGGS. Does not this trouble occur in the fall, and escape your notice till spring?

The PRESIDENT. I do not think so.

After a brief discussion on parasites and insect enemies, in which nothing new or important was elicited, the meeting

Adjourned.

EVENING SESSION.

At the opening of the evening session the following original poem was read by the author :

FLAMEN POMONALIS.

By J. M. LARRABEE, of Gardiner.

In ancient days of myth and gnome,
When gods and goddesses, in Rome—
With temples numerous and grand,
And altars crowned on every hand—
Held sway ; when nymphs with thoughtful care,
In human labors had a share,
And loved and were beloved in turn—
As human hearts for love's light yearn—
Pomona, fairest of her race,
Among the fruit-trees held a place.
And from her garden, orchard, field,
Produced by skill the highest yield.
And while she helped with cultured hand
The growing products of her land,
Or gathered fruits in garners laid
For future use : This virtuous maid
Determined in her heart, that she
A celibate for life would be.
So shutting up her garden gate,
The young gods left outside to wait.

Vertumnus sought by human guise
This virtuous maiden to surprise,
And many a cunning scheme he planned
To win her virgin heart and hand.
Sometimes a reaper lad was he ;
Again a plowman he would be ;
Sometimes vine dressing was his plan ;
A soldier next, or fisherman ;
But all in vain : the obdurate miss
Would never grant a single kiss.

Pomona, watching, saw one day
An aged woman pass that way,
And bade her, with a kindly smile,
To stop and rest herself awhile.

The woman, talkative and gay,
Related in a pleasant way—
As any garrulous woman would—

The gossip of the neighborhood.
Her manners gentle, unrestrained,
Pomona's confidence obtained.
She, still conversing, did relate
The blessings of the marriage state;
The joys that crown a loving wife;
The evils of a single life.
The charming nymph was not amazed
To hear the god Vertumnus praised,
And then first felt within her heart
The painless sting of Cupid's dart.
Then saw a transformation strange,
The woman to Vertumnus change.
The nymph of fruit became with pride,
The god of season's lovely bride.

Pomona's worshipers, with cheer,
Their sacrifices made each year
To her, that she in preservation
Would keep the best fruits of the nation.
Her *Flamen Pomonalis* stirs
The hearts of all her followers.

Fair nymphs and goddesses to-day,
As deities have lost their sway,
Our "Hamadryads" by their arts
Become, each one, a queen of hearts,
And placed, each at her fireside,
As goddesses at home preside.
But still, upon the roll of fame,
We find Pomona's honored name;
Her pomological relation
Is seen in your Association.
Pomologists of wintry Maine,
The virtues of the nymph retain;
The super excellence of their fruit
Proclaims them members of her suite,
And many a Pine Tree orchardist,
Pomona's "Maiden Blush" has kissed.

Then "Seek-no-farther," "Northern Spy;"
Next summer "William's Favorite" try.
And should you an "Early Harvest" plan,
Forget not bright "Red Astrachan."

And when the "Pumpkin Russet" turns,
And "Sops of Wine" your stomach yearns,
When "Moses Wood" is "President,"
When "Rambo" wins the "Beauty-Kent,"

When "Minister" becomes a "Dean,"
 And "Duchess Oldenburg" a queen,
 Then let your "Granite Beauty" meet
 On "Kilham Hill" her "Franklin Sweet;"
 And have your "Fameuse" "Porter" wait
 Beside the "King of Tompkins" gate—
 Above his head the "Hightop Sweet,"
 The "Garden Royal" at his feet—
 Until he sees the "Golden Ball"
 Ascend above "Tetofsky"(s) wall,
 Then "Jonathan" and he can eat
 Each "Twenty Ounce" of "Superb Sweet;"
 But should his "Mother" hungry get,
 She'll send him off to "Somerset,"
 From good "Benoni" to obtain
 A "Nodhead" and a "Blue Pearmain."
 Should "Hubbardston Nonesuch" allow,
 But "Chase" him with a "Yellow Bough,"
 Then "Sarah" will be pleased I ween,
 If he brings home a "Gravenstein."

Pomologists: If we are wise
 We all shall seek "Sweet Paradise,"
 Or at "Peck's Pleasant" quarters stay
 When "Gloria Mundi" slips away,
 And let us, when the "Winter White"
 Shuts "Winthrop Green-ing" out of sight,
 Rest till the "Bald-win"(d) rudely shakes
 The "Golden Russet" down in flakes;
 Then shall the "Ladies' Sweet" be ours,
 Enwreathed with fairest of "Bellflowers."

The following paper was then read by the writer:

THE NURSERY BUSINESS IN MAINE.

By W. P. ATHERTON, of Hallowell.

Mr. President, Ladies and Gentlemen:

In the presentation of this subject for your consideration to-day, I beg your indulgence and closest attention, and you will allow me to say that I take this liberty because it is an old subject and may not seem to claim any attention, and, furthermore, that I have chosen this one with some reluctance, being well aware that it is delicate if not dangerous ground, and that I must tread softly, and yet with a strong desire to do good. My only object is good and

not evil. My only object is the dissemination of knowledge and the right kind of knowledge. I love my native State and I love to see every form of industry prosper, from the plow to the loom. The resources of our noble State are boundless, and our farmers ought to produce every pound of beef, every bushel of corn, and every barrel of flour we need or that we can possibly consume. We ought also to produce every tree and vine that we need. Orcharding here in Maine is but in its infancy, and as the nursery is the source from whence is procured the foundation of the orchard, this business needs to be greatly encouraged. It has done much for us in the past, it may do more for us in the future. But there is no need of our sending out of the State for trees. We might produce them here. Several Maine nurserymen have in years past been engaged in the business and have propagated and disseminated thousands of good trees. Why have many of them gone out of the business? Why has it not proved successful? There are reasons surely, and it will do us no harm to consider some of them. I will begin Yankee-like by asking the question: Why has the nursery business in Maine failed to meet the wants of our orchardists? First, it has failed from a want of capital; second, it has failed from a want of a thorough knowledge of the business, and thirdly, it has failed because it has been attempted as a temporary resort instead of being pursued persistently as a permanent business. The nursery business to be conducted properly, requires large capital, extensive grounds, and an abundant supply of manure, especially if the object be to meet the demands of the market. Should one man or a number of men want one hundred thousand trees at one time, the nurseryman must be able to furnish them from his own stock, or from some one in the same business near at hand. Now, if a man has the capital, the necessary grounds and the requisite knowledge to begin with, it will of course be of great advantage, it would help him along amazingly, but it is not absolutely necessary that he should; he could begin in a small way and enlarge his capital as his business increases. It is true, large orders might come in when the business was small, and it would be somewhat mortifying and discouraging not to be able to fill those orders, and have them go elsewhere, but the only way would be to put what you have on the market in good shape, and work the business up gradually.

But this does not militate against what was stated at the first, that a man must have capital if he would be successful; it is one of

the requisites to success, whether obtained at the start or after years of persistent labor. Now if the nursery business here in Maine has failed in any degree to meet the wants of our people, and I think it has, it is because of several reasons, one of which is a lack of capital. We don't lack the right kind of climate, we don't lack the right kind of soil, in Maine. It has been abundantly proved by several who have attempted the business, that nearly all of our varieties of apples can be safely and successfully budded and grafted in the nursery, about the only exceptions being the Baldwin and Roxbury Russet, and even these perhaps might be, could they be tested thoroughly and intelligently and under circumstances wholly favorable to them. In latitude we are only sixty or sixty-five miles farther north than the Rochester nurseries, New York, while we are one hundred and ten miles south of the Woodstock nurseries, New Brunswick.

Second, it has failed because men have entered upon it without any knowledge of what the business required; they have thought in too many cases, that all that was necessary was to sow a few rows of pumice seed and to give a little hoeing and thinning when the plants were growing; they have failed to perceive that two or three acres of half starved and half neglected seedling or grafted nursery trees amount to nothing, that they have selected the wrong soil, and have failed in drainage and in protection. I know of one nursery that went up in three years because it was planted in a low, damp place; they were seedlings, not forced but grown slowly in a fairly rich soil, and they nearly all winter killed in one winter. I know of another nursery, abandoned several years since because the soil was not suitable, it was a strong clay; trees transplanted from this soil to a rocky, gravelly loam, felt the change to be an uncongenial one, and refused to grow for a long time. Another nursery, and a large one, was abandoned or sold out a good many years ago from a want of practical knowledge to carry it on properly; some good stock, undoubtedly, was sold from that nursery, and some bad stock too, and it was the bad stock that helped the downfall. It will not do to sell all stock on the bare reputation of the nursery, it must have an intrinsic value; the farmer wants something besides pedigree when he buys a cow, and the orchardist is not to blame if he is just as particular. Another nursery, and one that was pretty well conducted generally, was recently given up because the proprietor, as he says, could not compete with western

trees. But the real trouble was the lack of a true appreciation of what the business required; the owner was a man of more than ordinary intelligence, and he knew the nature and requirements of the apple tree as well as any man, but he knew the theory better than the practice; he knew that he had not the time nor the means to give the trees proper and sufficient pruning; he knew that he could not, or rather that he did not, protect his trees from deep, drifting snows, and he knew that the land selected for his nursery, though naturally a good soil, needed to be thoroughly underdrained; and knowing all this he continued for awhile to raise and sell trees, good, bad and indifferent, but failing to receive that patronage which he expected, he went out of the business, laying the blame wholly upon the western tree vender, not realizing then, and perhaps not now, that the real seat of the difficulty was at his own door. It is impossible to raise good, sound trees on undrained soil; they will give dissatisfaction sooner or later. I said that some failed from a want of knowledge, but this man had some knowledge, and yet he failed to comprehend what the business required and what the farmers required. And still another nursery has but recently gone up, or been sold out because the proprietors cannot properly attend to the business; more likely I should say, because they do not understand the business. It is a business that requires not only a knowledge of some things, but a knowledge of a good many things, and the good many things we will come to by and by. Others might be named, but doubtless the failures which have come under my notice are but a part of the great bulk of failures throughout the State.

The third reason why the nursery business in Maine has failed to secure the best results, is because some have resorted to it only as a temporary expedient or speculation. Not having the time or inclination to give it the study and investigation which it requires, they have carried it on in the most slovenly and slipshod manner possible. and the consequence has been, that the public has either given them a wide berth or purchased sparingly of their wares.

Now, what I mean by a temporary resort, is this: some farmer imagines that he can sow a small plat of ground with apple-pumice seed and raise a nursery of trees which will supply, not only himself, but his neighbors and a portion of the public; that he can do this without much trouble or expense and reap a little pecuniary benefit, in fact that he can sandwich this in somehow and somewhere among

his other farm operations and make a little money ; he does not care to follow it long and so he gives the subject no thought, no investigation ; he goes to little or no outlay in preparation of soil, in drainage, in dressing, in protection, or in transplanting and pruning. What, then, is the natural consequence of this idea followed out in this manner? Just what might have been expected! Failure, and failure of the worst kind ; because, not only the owner himself is disappointed, but the public is disappointed and defrauded, and damage of this sort cannot be rectified in a day or a month ; it often takes years to recover from the evil effects of setting poor trees, and life is too short to make many such mistakes. 'Tis true, a small house well ordered, is better than a large one badly managed ; a little farm well tilled, is more to be desired than a great one sadly neglected, and so, too, a small nursery well cultivated and well pruned, is better than a large one half starved and half neglected ; but the trouble is, it is the little ones that are generally half starved and neglected and it is perfectly natural that it should be so. How can the farmer, engrossed with the cares of his farm and busily engaged the greater part of the season in planting, hoeing, haying and harvesting, attend to the wants of the nursery properly? He cannot. The attention which he does give is usually a hap-hazard, go-between one and the results are generally after the hap-hazard style. Ordinarily speaking, then, it is impossible for the farmer to enter into and conduct the nursery business in such a manner as to attain and receive the best results. I am not speaking against the farmer or orchardist raising his own trees, not at all ; he can do so if he has the time and inclination, and I should also add, the determination, for it does require pluck and perseverance to raise a good tree.

Well, what then? Shall we give the whole thing up? Oh, no! The case is just here—the majority of farmers and fruit men prefer to buy their trees rather than to raise them. Again, as a rule, that business is the most successful which is conducted on business principles, and who so likely to do this as those who have the means and the opportunity, and where every department is thoroughly understood and equipped? The interest in the fruit business is increasing every year and the demand for trees is increasing in like proportion. I am, therefore, in favor of Maine raising her own trees, if it can be done, and of spending our money in our own State, rather than

of sending it abroad by the thousands of dollars, to enrich some one else. It is no use to say that our climate is unpropitious and that our soil is too hard and rocky; in reality it is not; but suppose it is, that is just where you want to try the trees—under unfavorable circumstances; and if they prove hardy and succeed there, then they will prove hardy and succeed when transplanted. Do you say it is the Baldwin, principally, that is wanted, and it is no use to graft or bud this variety in the nursery? I answer, this is true of the middle and southern sections of our State in regard to what is wanted, but I am not sure that this variety has ever been tested as thoroughly and understandingly as it might have been. I do believe that if this variety was tested on the right kind of soil, rich, gravelly loams, on moderately high elevations, and under the most favorable circumstances of drainage and protection, the results would be successful. At any rate, thousands of good, hardy seedlings might be produced, of proper height and shape to fill the market, while the matter of standard Baldwins in the nursery was being tested in a small way.

If Dr. Hoskins can be successful in raising fruit trees in the high elevations of Northern Vermont, and F. Sharpe & Son successful in producing hundreds of thousands of trees still farther north (though less in elevation), in Woodstock, N. B., why may not Maine nurserymen raise all the trees we want? The banks of the Androscoggin, the Kennebec and the Penobscot are just as well adapted to the business as the banks of the St. John or the regions around Lake Memphremagog. And if the middle and southern portions of our State have not suitable locations to raise those varieties adapted to the Aroostook and other northern counties, then there is plenty of land in Northern Aroostook well suited to the purpose. Then let some active, enterprising young man or company of men take up land there in the right place and go right into the business with the determination to succeed, and I believe their fortunes could be made. There is a growing demand for apple trees in Aroostook. Only a few days ago a prominent man from that section expressed to me his intention of setting out, the coming spring, one thousand trees on his farm, and he supposed he would have to send out of the State for them, as he knew not where he could obtain them within our borders.

Finally, let me point out briefly some of the many things required to be a successful nurseryman here in Maine. The most important

thing of all is to have the right idea at the start. To comprehend the situation in the beginning of any enterprise is a mighty lever, and to fail to comprehend the situation is a mighty drawback. Therefore, to know what the public requires, what kind of trees, how grown and in what quantities, is essential to success. The next thing is to select the right kind of soil. A light sand and a heavy clay must be rejected as unsuitable. Doubtless the very best kind of soil to be selected would be a rich, sandy loam, inclining to clay; but the grand trouble with all such soils is that, generally, they are too low down. A strong, gravelly loam is, on the whole, the best. The location of the nursery is also an important matter; it should never be on low, flat land, nor on the eastern slope of a hill where the snow lies deep; for deep, drifting snows are always damaging. The most suitable location is the top of a ridge or moderately high elevation, protected on the north and west by a forest, if possible; if there be no forest, plant a row of evergreens or build a board fence, for it is absolutely necessary to protect the young trees in some way.

DRAINAGE.

Without drainage, either natural or artificial, it is impossible to raise good, sound, healthy trees. A certain amount of heat and moisture is indispensable to the growth of all plants, but if there be too much moisture, there will be a consequent deficiency of heat and the plants will suffer. We all know that where land is well drained, either naturally or artificially, it can be worked much earlier in the spring for any crop, and that the chances for a successful crop are every way better from its superior condition. The same is equally true when the land is devoted to raising nursery stock.

TRANSPLANTING.

It will be impossible, in a paper like this—already lengthy—to discuss this part of the subject properly. It is enough to know that the best nurserymen always transplant their trees, and they invariably do this when the trees are young. The work can be done more rapidly then and with less mutilation to the roots. The advantages of transplanting are, straight lines for cultivation, proper distance apart, more room in the earth for the roots, more breadth in the air for the tops, with better branches and less pruning. The trouble has been that too many of our Maine nurserymen have either not

transplanted their trees at all, or when they did, they have set too closely and the result has been a large percentage of dwarfed and crooked trees. No good nurseryman can afford to lose from twenty to twenty-five per cent in this or any other direction.

PRUNING.

To know how to prune is quite an art, that is, to understand the best time of the year adapted to the age and condition of each tree, and whether that tree is a seedling or a graft; and the amount, not too much nor too little, is quite an art, and it is something that must be learned by personal practice in the nursery. To say that seedlings need but little or no pruning in the nursery is a mistake; undoubtedly they will not bear as much pruning as grafts. If all the side branches and spurs were cut off when very young, the tree would probably grow up too slender and willowy; but, again, there is danger, if not pruned at all, that some of the side branches will develop too much and too low down, dwarfing the top and trunk both. I have seen a good deal of this sort of work, or, rather, want of work, and it is high time that a different method be adopted if we are ever to have straight trees and of the proper height.

CLEAN CULTURE.

Finally, among the many things to be mentioned as necessary, the last but not least is clean culture. If a perfect nursery is to be established, I don't believe in half-doing anything. Thorough work and enough of it is the best doctrine. To let grass and weeds grow rampant or have any influence whatever in the nursery is a mistake. Some may not agree with me, they may claim that it should be kept down somewhat in the earlier part of the season, but left to grow later and serve as a protection or mulching to the roots of the trees in the heat of summer and cold of winter. I answer, the tops of the trees will shade the ground sufficiently in summer, and if the land is well drained the snows will protect the roots during the winter. In closing, let me say, that if all the conditions of our soil and climate are faithfully observed and carried out, no one need be discouraged or dismayed in attempting to pursue this branch of husbandry, and, furthermore, our farmers and orchardists will not be slow to appreciate such efforts and to give their patronage where it rightfully belongs.

Mr. ATHERTON followed the reading of his paper with some extempore remarks, which led to a general

DISCUSSION.

Mr. SWEETSER. I would like to ask Mr. Atherton how high he would want the heads of the trees if he was going to graft them in the limbs?

Mr. ATHERTON. That depends upon the variety, and whether you are going to keep sheep. If you intend to keep sheep in your orchard, you want tall trees. All people who keep sheep select tall trees, and it is an important point with them.

Mr. SWEETSER. My idea is that there are a great many advantages in having the heads of the trees low—in gathering the fruit and in its falling, particularly. I have one tree of Seek-No-Farther from which I can stand on the ground and gather eight bushels. It bears well and they never drop; and my idea now is that I should prefer low trees. In my first orchard the lowest branches were up six feet from the ground.

Mr. GARDINER. Would it not make a difference in different kinds of trees? Look at the Bellflower. If you have it branch at about five feet, half the branches will droop to the ground. The Northern Spy grows upright, and therefore should be headed low.

Mr. SAWYER. I think it likely that I may say some things which other members will not agree with. But in regard to this matter of raising Baldwins in Maine, I am not ready to admit, from what I have observed and learned, that we cannot raise Baldwins in the nursery in Maine successfully. My own practice has been very limited, but I have never yet found any difficulty. We have had much difficulty with the Baldwin nursery trees in Maine, but I think it will be found that the trees which have troubled us most have been root-grafted. Now I believe that a root-grafted tree is not so hardy as one grafted in the trunk or limbs. I do not doubt that a root-grafted tree will live under favorable circumstances, but it will be subject to injury by the severity of the winter. It may be that the time has come when we can make as good a tree by grafting a scion upon a piece of the root—but I have not seen them yet. I have seen a great many root-grafted trees. I notice there is sometimes a portion of the tree where there is a large excrescence formed of unsound wood, and this is the point from which the suckers start. I have also observed that root-grafted trees are more

inclined to produce suckers than trees growing from the seeds. In regard to the hardness of the stock, I believe if it is a good practice to leave those spurs on the seedling stock, it is equally good to leave them on the grafted tree. They may be shortened, but ought not to be removed all at once. When you buy trees from a nursery, where the side limbs have been cut off all at once, you will find many suckers growing. It is good practice, then, to leave them on that part of the tree which is to form the permanent trunk, and when you have planted the tree where you want it to grow, to shorten them gradually. I have never had any difficulty by simply controlling the side growth, but I have not made it a rule to cut off the whole until I have got the tree where I want to form a permanent top. I do not see why the same practice is not required in one tree as another. I believe that with proper care, of course employing the conditions which Mr. Atherton has so well described as requisite, as to the soil, and as to the character and vigor of the tree itself, there is no difficulty in raising trees.

I have found it necessary every year to cut away some of the lowest limbs. It seems there is no harm in doing so; but I insist that the tree must have protection from the sun and wind. It was said in the discussion on the cracking of the bark, that the natural condition of a tree is a condition of protection. I believe that the tree needs protection in every stage of its growth, instead of exposure. Your young tree, if trimmed up, has not that protection; and until it can endure exposure and is of good size and growth, it must have protection.

Our friend, Mr. Frost of Monmouth, raises figs successfully every year, but there is no profit in it. He takes his trees up in the fall and carries them into the cellar, just as Mr. Sharp does his apple trees, but we cannot take our orchard trees in for the winter; we have to leave them standing. I do not believe it is necessary to wait till a tree has become large and formed its top, before grafting. I believe you can graft it lower down, and it will grow and form a continuation of the original stock. There was a time in 1855, or thereabouts, when the Baldwins were injured very much throughout the State of Maine, and so, from that day to this, it has been said that the Baldwins were tender; but you may as well say that the white maple is tender, because you don't bring up a cord of wood to your door without finding a black streak in the wood. We have thousands and thousands of Baldwins that have survived the

winters for from a quarter to half a century. I don't believe in that talk about the excessive tenderness of the Baldwin. It is too valuable a tree to allow us to say such a thing.

Mr. ATHERTON. Mr. Sharp's practice of taking up trees would not be practicable for us to follow, he can do it perhaps. And then the matter of setting the trees close together. I think they have an object in view, and put them nearer together for protection and to get all the fruit they can while the trees are young. He told me that he sometimes sent a hundred thousand trees to the West; he has a very large, deep cellar, and so he takes his trees up in the fall and carries them in. These trees, where the side branches were trimmed off, were not more than two years old, so when they are four or five years old the tops are all there. He had the Mackintosh Red, the Duchess, and other varieties, but no Baldwins or Rhode Island Greenings.

Mr. GARDINER. There is one point in the paper which has not been touched upon, and that is in relation to the condition the trees are in when they are brought here. I think it was a very great loss to the State when Mr. E. K. Whitney gave up the nursery business. I had a hundred trees from him at one time, and I don't believe that ever in this State there was a better lot of trees sent out. There was not a root broken or cut; every root the trees ever had was on them. They came in the most perfect order and were set out in a very unfavorable season, and all but two grew.

The reason why so many of the western trees fail to live is because they are brought here in bundles, kept in the open air, and exposed and dried for weeks; therefore, three-fourths of them die.

Mr. BRIGGS. I believe a great deal depends on the selection of apple seeds, whether you get them from the cider mill or whether you save them from good seedling apples.

Mr. GARDINER. I would save them from the seedling apples.

Mr. BRIGGS. I think that is correct, from my experience. I planted a little nursery a year ago last fall, and had seeds enough saved from good apples, but, fearing there were not quite enough, I went to the cider mill and got a few bushels of pomace, and those trees that grew from the selected seeds were twice or three times as large as those that grew from the seeds from the pomace.

In regard to trimming the trees, a man told me that the first class trees from the New York nurseries are trees that are stripped of the leaves as fast as they appear, and the trees that have the spurs

trimmed are second class trees. The first class trees have none of these knots on them. The leaves are stripped off, except a few at the top. Those trees with the knots on them are refuse trees and are trimmed afterwards, and those are the trees they sell to us for first class. I don't believe it makes any difference whether a tree is grown in Maine or in New York, if properly grown and cared for. I think Mr. Atherton is mistaken in saying that the nursery should be screened by a board fence or forest on the west, because the snow blows from the west largely, and it would surely drift over a fence and break down the nursery stock. I have selected, for a little nursery for my own use, a place that has a westerly exposure, and is underdrained five feet deep, so that all accumulation of water is prevented.

In regard to the hardness of Baldwin trees, the great trouble is the tenderness of the wood. A great many of mine will split down, but other varieties will withstand all the load you can put upon them.

Mr. SAWYER. Is the splitting of the Baldwins in that way in consequence of the tenderness of the wood or the great weight of the fruit upon it?

Mr. BRIGGS. Trees of other varieties will withstand a large weight of fruit where a Baldwin with limbs of the same size will break. I had a great many break this year at the crotches. I think the wood is liable to be soft.

Mr. ATHERTON. I had some trees break in that way, but generally considered that it was because they were so heavily loaded.

Mr. BRIGGS. Exactly; but other varieties that are loaded heavily would withstand the same weight. But, for this latitude, I know no reason why the Baldwin is not a hardy tree.

Adjourned.

SECOND DAY—MORNING SESSION.

The Society met at 9 o'clock A. M., and proceeded to the transaction of the unfinished business of the Annual Meeting.

The Treasurer presented his account for the year ending December 31, 1884, together with the report of the Executive Committee, as follows :

GEO. B. SAWYER, *Treasurer*,

IN ACCOUNT WITH MAINE STATE POMOLOGICAL SOCIETY.

Dr.

To am't rec'd from the State, bounty of 1883,	\$500 00	
“ “ of life members,	20 00	
“ “ “ annual members,	37 00	
“ “ of State Agricultural Society,	425 00	
“ “ from interest, Permanent Fund,	17 20	
	<hr/>	\$999 20

Cr.

By balance due Treasurer on account for 1883,	\$24 81	
Am't paid orders of Executive Committee,	297 89	
“ “ Salary of Secretary, for 1883,	100 00	
“ “ “ “ “ 1884,	100 00	
“ “ on account of printing	25 00	
“ “ interest on loan,	6 00	
“ “ balance premiums of 1883,	167 00	
“ “ on acc't of “ “ 1884,	193 00	
	<hr/>	\$913 70
Balance, cash in the treasury,	85 50	
	<hr/>	\$999 20

STATEMENT OF THE FINANCIAL CONDITION OF THE SOCIETY,
DECEMBER 31, 1884.

Assets.

Amount due from the State, bounty for 1884,	\$500 00	
Property owned by the Society, estimated,	150 00	
Extra dividend due from Wiscasset Sav. Bank,	22 36	
Cash in the treasury,	85 50	
	<hr/>	\$757 86

Liabilities.

Amount due on loan,	\$200 00	
“ “ premiums of 1884,	441 00	
“ “ unpaid orders.	55 25	
“ “ bills not rendered, estimated	50 00	
	<hr/>	\$746 25
Balance,		<hr/> \$11 61

Permanent Fund.

Cr. By fees of 78 life members,	\$780 00
Dr. To amount on deposit to credit of fund,	344 40
	<hr/>
Balance due fund,	\$435 60

Respectfully submitted,

GEO. B. SAWYER, *Treasurer.*

GARDINER, February 24, 1885.

The foregoing account and report was referred to a committee, consisting of Messrs. J. M. Carpenter, L. H. Blossom and W. P. Atherton.

The Society then proceeded to the election of officers for the ensuing year, with the following result:

For President—Charles S. Pope, Manchester.

Vice Presidents—S. R. Sweetser, Cumberland.

Henry McLaughlin, Bangor.

Secretary and Treasurer—Geo. B. Sawyer, Wiscasset.

Executive Committee—The President and Secretary, *ex-officiis*, Andrew S. Sawyer, Cape Elizabeth; Leander H. Blossom, Turner; W. P. Atherton, Hallowell.

Trustees—Androscoggin County, D. J. Briggs, South Turner.

Aroostook	“	E. E. Parkhurst, Maysville
		Centre.
Cumberland	“	Otis C. Nelson, New Gloucester.
Franklin	“	G. K. Staples, Temple.
Hancock	“	Charles G. Atkins, Bucksport.
Kennebec	“	Richard C. Plaisted, Gardiner.
Knox	“	Elmas Hoffses, Warren.
Lincoln	“	H. J. A. Simmons, Waldoboro’.

Oxford	County,	Jairus K. Hammond, Paris.
Penobscot	"	J. E. Bennoch, Orono.
Piscataquis	"	H. A. Robinson, Foxcroft.
Sagadahoc	"	Henry S. Cary, Topsham.
Somerset	"	James S. Hoxie, North Fairfield.
Waldo	"	D. B. Johnson, Freedom.
Washington	"	Nelson S. Allan, Dennysville.
York	"	Luther S. Moore, Limerick.

Mr. S. L. Boardman, having announced the death of Alfred Smith of Monmouth, a life member of the Society, was requested, by vote of the Society, to prepare an obituary notice for publication in the transactions.

Mr. Gardiner announced the death of Charles Downing, and, after remarks by several members. Messrs. Gardiner, Atherton and Gilbert were appointed a committee to prepare and present appropriate resolutions in relation thereto.

Announcement was made of the decease, since the last winter meeting, of the Hon. John E. Godfrey of Bangor, and F. G. Richards of Gardiner, life members of the Society.

Mr. Boardman, in behalf of the Committee on the Exhibition of Fruit at New Orleans, submitted the following

REPORT.

Your committee to solicit and arrange for an exhibition of Maine fruit at New Orleans, would report that they early organized for the work before them and set about its performance with all the time and ability they could command. During the time of the State Fair at Lewiston, last fall, they made a careful study of the fruit on exhibition, to ascertain who had the finest specimens of certain varieties that could be obtained for the exhibition, taking the names of the exhibitors and the varieties shown. At that time the members of the committee held several consultations, and they also, by appointment, held several interviews with the Commissioners of the State for the Exposition, and with Mr. Ham, the Special National Commissioner. At that time the members of the committee divided the work, and assigned certain details to each to perform. Mr. Pope visited some of the best orchards in the county of Kennebec, and personally solicited the finest specimens he could find; Mr. Prince did the same in his section, and Mr. Boardman also visited

several fairs, where much time was given to the work of soliciting fruit. The committee then had a circular letter printed, containing instructions in regard to the picking, packing and shipping of fruit for the Exposition, which was sent to the leading orchardists in all parts of the State. This was accompanied by two sets of printed postal cards for reply, one to be sent to Mr. Ham and one to the committee, informing them when the fruit was shipped. Printed tags for packages were also sent. These things were done in order that the work of shipping might be uniform, and that as little care to these details as possible might come to the parties sending.

From the lateness of the season—the State Fair was held September 21-24, and the work of sending forward fruit did not begin till some weeks after on account of the holding of the county fairs—it was out of the question to think of obtaining fall varieties. And yet some late fall and early winter sorts were obtained. Cold storage was obtained for the fruit at Lewiston, previous to sending forward to New Orleans, and every precaution and arrangement taken by the committee, with the means at their command, to insure safe keeping and rapid transportation. In addition to the printed circulars above referred to, many private letters were written soliciting specimens, and personal visits made to fruit growers. The results of this work were that the committee received responses from twenty-nine individuals, who contributed twenty-seven barrels and ten boxes of fruit, and one specimen of evaporated apple. Kennebec County sent the largest number, viz: sixteen barrels. The others came from Androscoggin, Cumberland, Franklin, Somerset and Sagadahoc counties. A list of the individual contributors, with the varieties sent by each, is here given:

W. P. Atherton, Hallowell, four barrels: comprising Baldwin, Roxbury Russet, Northern Spy, Tompkins King, Red Canada, Talman Sweet, Ladies' Sweeting, Newbury Sweet, Wagener, Winthrop Greening, Nodhead, Danvers Winter Sweet.

Hon. G. H. Andrews, Monmouth, one barrel: Baldwin, Black Oxford, Roxbury Russet, R. I. Greening.

Andrews & Peacock, Gardiner, one barrel: Northern Spy, Black Oxford, Peck's Pleasant, Hubbardston Nonsuch.

J. O. Butman, Readfield, one barrel.

D. J. Briggs, South Turner, one barrel: Baldwin, English Russet, Talman Sweet, Wagener, Northern Spy, R. I. Greening, Tompkins King.

Henry S. Cary, Topsham, one barrel : Baldwin, R. I. Greening, Talman Sweet.

J. Colby Dudley, Readfield, one barrel : Baldwin, Northern Spy, R. I. Greening, Red Canada, Hubbardston, Nodhead, Jewett's Red.

Hon. R. H. Gardiner, Oaklands, Gardiner, four barrels : Bellflower, Hubbardston Pippin, Gloria Mundi, Talman Sweet, Northern Spy, Nodhead, Richard's Graft (Strawberry), Fameuse (Snow), Ribston Pippin, Blue Pearmain, Hunt Russet, Black Oxford, Tompkins King, Hubbardston Nonsuch, R. I. Greening.

Hon. Z. A. Gilbert, North Greene, Milding.

C. H. George, Hebron, one barrel : R. I. Greening.

Nathan W. Harris, Auburn, Wagener.

A. L. Hersey, Oxford, Maiden's Blush.

D. H. Knowlton, Farmington, three barrels.

E. A. Lapham, Pittston, Black Oxford, Tompkins King.

H. T. Leech, Monmouth, Roxbury Russet, Baldwin.

T. S. McLellan, Brunswick, Wealthy.

C. A. Marston, Skowhegan, one barrel : Northern Spy, Tompkins King, Gray Pearmain, Black Gilliflower.

M. J. North, one box containing one-half bushel.

Hiram Pope, Gardiner, Hunt Russet.

Hon. Rufus Prince, Turner, one barrel : Black Oxford.

J. Pope & Son, Manchester, two barrels : Baldwin, Talman Sweet, Danvers Winter Sweet, Winthrop Greening, Gravenstein, Maiden's Blush.

Harrison Parlin, East Winthrop, Winter White.

Albion Ricker, Turner, one barrel : Tompkins King.

S. R. Sweetser, Cumberland, one barrel : Northern Spy, Jewett's Red, Tompkins King, R. I. Greening, Red Russet, Baldwin, Red Canada, Roxbury Russet.

Arthur S. Taber, Vassalboro', one barrel : Starkey, Golden Ball.

Miss L. L. Taylor, Belgrade, one barrel : Hubbardston Nonsuch, Northern Spy, Sweet Russet, Tompkins King, Blue Pearmain, Baldwin, Mother, R. I. Greening.

J. J. Towle, Carthage : one box evaporated apple.

W. R. Wharff, Gardiner, Black Oxford, Tompkins King.

A. F. Williams, one barrel.

After the committee had received all the notices which were reasonably expected, Mr. Pope went to Lewiston and gave his

attention to the work of shipping. The fruit was sent forward about November 20. Finding it was necessary to have some one to attend to the placing of the fruit on exhibition, and not having the means to pay a person for their service, Mr. Pope, who had decided to visit the Exposition, volunteered to take charge of the fruit at New Orleans, and place the same on exhibition. He left Maine December 2, and arrived at New Orleans December 28. The history of the Exposition is too well known to be repeated here. There was delay in all the arrangements—delay in opening the buildings to the public, and when opened nothing was in readiness. It is but just to state, however, that our Commissioner, Hon. J. B. Ham, proved one of the most efficient officers at the Exposition, and did all in his power—which was a great deal—to aid the work of the Maine exhibitors. When Mr. Pope reached New Orleans he found the refrigerator room incomplete, and our Maine fruit yet unloaded from the car, out of doors, in the warm January temperature of the Crescent City. Concerning the fruit, Mr. Pope says: “The apples arrived in good condition, but after staying three weeks in the heat, they had begun to decay some when they were ready to be placed on the tables.” It was found that the examining committee would not see them as soon as they were placed upon the tables, as promised, but, like everything else there, they were two weeks behind with their work. Consequently, arrangements were made to have more taken from the reserve in the refrigerator at the time, and replace those that were decayed. The refrigerator was only such in name, as the cold air had not then been introduced; and when opened the apples were about half rotten. A peck or a half bushel of each variety of our leading winter sorts, which were in good condition, were then placed on the tables in Horticultural Hall; and a display in quantity was also made in the Maine State Exhibit in the Government Building, the last named being of the leading winter varieties, for shipping. Our fruit compared well with that from California, Michigan, Wisconsin and some other States; and upon the whole, although much disappointment was the result of the exhibit, it was no greater than came to other exhibitors from other States and in other departments, and from this fact we gather a little consolation. We also feel sure that a point has been gained by the Pomological Society in making known the superior shipping qualities of Maine late-keeping apples, by this exhibit; and while it may not have yet commenced to show results, we feel that it will

in the future. At any rate, since this Convention has been held in Gardiner, a cablegram has been received direct from Liverpool, by a Gardiner orchardist, giving quotations of apples in that market, in which Maine Baldwins are placed higher in price than those from New York or Canada.

Your committee cannot close this report without a word of praise to Hon. J. B. Ham for his earnest efforts in aiding their work, and his readiness to do anything in his power to help on their mission. Here and at New Orleans, both, Mr. Ham was ever ready to second our plans, and help carry forward their accomplishment. Thanks are also due to each person who so kindly responded to our invitation to send fruit; and especially to Hon. R. H. Gardiner, for his kindness in writing to personal friends in New Orleans in our interest. And as chairman of the committee, I wish personally to thank each gentleman associated with me for their uniform courtesy, and I beg to say that my thanks, and those of the Society, are especially due to our President, Mr. Pope, my associate, for his earnest personal efforts in this work. To him, more than to any one else, is due whatever of praise or credit belongs to your Committee on the Maine Exhibit of Fruit for the New Orleans World's Exposition.

Respectfully submitted.

SAMUEL L. BOARDMAN,

For the Committee.

The report was accepted, with a vote of thanks to the committee for their services, and to the several contributors to the exhibition.

The following paper was then read by the President, the writer of it not being in attendance:

COMBATting THE ROUND-HEADED BORER.

By CHARLES G. ATKINS of Bucksport.

One of the first observations I had occasion to make about the round-headed borer in my apple trees, was that the eggs were laid in the bark so near the surface of the ground (if not, indeed, sometimes just below it) that as soon as the young borer began to work, all external traces of his presence would often be concealed from view by the earth or the grass-roots. To ensure effective work, it was necessary to dig away a little of the rubbish and dirt and scrape the bark clean. I always did this myself and enjoined the practice upon my hired help. The necessity of replacing the dirt after oper-

ating did not at first suggest itself, and so we kept on, year after year, removing a little of the dirt, perhaps not over half an inch yearly. In a few years we had thus formed a depression all about the collar of the tree, and in many cases the roots had been laid bare. The beetles continued to lay their eggs close to the depressed surface, and it became yearly more difficult to find and extract the borers. Not only would many escape detection, but when the outlet of an excavation was deep in the basin, and the gallery ran upwards, it was very difficult to insert a wire and drive it home. When they got down so far as to work under the roots, then it was quite a hopeless job. At the same time, experience had led to the conviction that if the borer beetle could be induced to lay her eggs high enough on the trunk, the detection and destruction of every egg or larva in an early stage of growth would be, on smooth-barked trees, a comparatively easy matter for a man with good eyes and patient disposition. The mother beetle makes a perpendicular slit in the bark, which, after drying, shows as a ragged-edged gash one-quarter or three-eighths of an inch long, and beside this is a very slight swelling in the bark, beneath which lies the leathery-skinned egg, under the bark and next the wood, if the bark be thin, but if the latter be thick, then beneath its outer layers. Press with your knife handle or the flat of the blade on the bunch and you will hear the snap of the bursting egg. This is the condition of things during the latter part of the summer. In early autumn you can find the young larva by the same mark, and it is not until a year has passed after the laying of the eggs that the borer gets far away from his cradle. Some time during this first year he ought to be found and destroyed; and the earlier the better, for, according to my observations, the period of his greatest mischief is when he is about a year old, say in June and July.

What are the means of compelling a borer beetle to lay her eggs high on the trunk? Probably a close wrap of cloth, cedar bark, tin or stout paper would do it, but I have been warned that these preventives have sometimes led to disappointment, the beetle getting in behind them. Besides, it must be a good deal of trouble to put them about the trees and remove them again for examination. I could think of nothing that promised so great efficiency combined with economy, as a little mound of sand. Any kind of dirt would do as well as sand, were it not for the liability to be pushed away on all sides by the swaying of the tree in the wind and packed so as to

leave an open space all around the trunk for the beetle to crawl down into. Loose sand will not pack, but if the tree sways will, as soon as it returns to its natural position, settle in and fill the gap.

A mound some six inches high, applied just before egg-laying, would compel the beetle to work above it, and later in the season, if it did not settle away sufficiently to permit thorough examination, it could easily be pawed away. I accordingly had nearly all my young trees mounded with sand in 1884. The date of application is a point of considerable importance. It should be before the beginning of egg-laying, and should be delayed as late as is safe, to permit of repeated examinations. The middle of June was fixed as the date beyond which it would be unsafe to delay the mounding. Soon after that, as near as I can conclude from limited data, the egg-laying begins. How long it continues is uncertain, but as I have found unhatched eggs after the first of September, it is probable that it continues till late in August. Therefore, the mounds should be kept well up till about the end of August. After that, they may safely be drawn away or suffered to sink down as they would naturally, under the influence of the rains, and need not be drawn up again about the tree until the next June. As the sand works away and wastes in the grass it may be renewed, but a liberal application will answer for several years. If sand be scarce it may be economy to place an old tomato can loosely around a small tree and fill it with sand, as recommended by Dr. True several years ago. Wraps of paper extending two feet up the trunk, tied on tight and left there the whole year may be found to be an effectual protection against both borers and mice, but I have not tried it. Tarred paper would be most durable, but injury to trees has been reported from its use, and until these reports can be shown to have been unfounded, it should be used with great caution.

So far we have considered only the young trees with smooth bark. On old, rough-barked trees the mounding would assist somewhat, but the condition of the bark would still make it difficult to find the borers. Such trees, I am sorry to say, I have thus far neglected, and perhaps to this circumstance I owe it in part that borers have been plentier in my orchards during the past two years than ever before. I propose now to take these cases in hand, and the first step will be, after a moderate application of sand, to apply an offensive wash to these trunks for, say, two feet from the ground.

The virtue of such applications is disputed by some, but there is so much testimony in their favor that I have great hope of success. I find many recipes in the papers and in my scrap-books. One that has a promising look is a kerosene emulsion, described in the Rural New Yorker as being used by the orange growers of Florida. It is made as follows: "Formula:—common or whale-oil soap, half a pound, dissolved in one gallon of boiling water; add two gallons of kerosene and churn while hot. In using, dilute with ten parts water. This makes thirty-three gallons of solution at a cost of one cent per gallon, where you have cheap kerosene." This mixture I have already used for spraying lousy trees, and apparently with success. I would apply it, perhaps double strength, to the trunks of trees by means of a hand force-pump, about June 15, July 1 and 15. Another application, recommended by Prof. Cook of the Michigan Agricultural College, is compounded as follows: "Dissolve two quarts of soft soap in a gallon of water. Heat this till it commences to boil, then remove from the fire and at once add one pint of crude carbolic acid. Stir well and keep in a close vessel. To apply this," says Prof. Cook, "I have found a common shoe or blacking brush, one with the handle diagonal to the body of the brush, most excellent. The use of these substances is to prevent the beetle from the work of egg-laying, and as the obnoxious odor of the carbolic acid mixture is very persistent, it retains its virtue longer than does the soft soap where used alone." I would prefer to dilute Prof. Cook's solution until it could be applied through a force pump. Remedies of this class have been often recommended, and they have been discussed in the meetings of the Pomological Society, but I think there is yet a lack of exact knowledge on the subject, and that it presents an excellent field for study and experiment.

In the first hunt for the borer, I employ a sharp knife and a wire or a narrow piece of spring steel; mallet and chisel, never. If the borer has penetrated so deep that he cannot be reached by the wire, it is sure that he has done nearly all the harm he is capable of, and it is much better to let him alone than to mutilate the tree badly. I have not yet found a pair of eyes sharp enough to discover every trace of a borer the first time, and therefore never trust to one examination a year. I have always two thorough canvasses, and generally three, and would prefer even four, two between August 1 and October 20, and two between May 1 and June 10.

In closing, I will venture the suggestion that preventive measures are not in all cases the best to adopt, and that the deposition of the borer's eggs is a case in point. Provided we have a plantation of young trees protected at the very base by mounds or other means, it is better to let the beetles lay their eggs in the smooth stems, where we can destroy them, than, by extending our preventive measures to the whole stem, compel them to resort to the limbs, where it will be more difficult to find them, or even drive them across the road into a neighbor's plantation, whence in a few years their numerous progeny will return to vex us.

DISCUSSION.

The discussion of the subject of Mr. Atkins' paper was extended to considerable length, occupying the remainder of the morning session. It brought out but few points of interest in addition to the common stock of information on the subject, and the report is condensed accordingly.

Mr. CAREY objected to the use of tarred paper around the trunks of trees; and related instances in which it had caused injury to the bark, especially on young trees.

Mr. ATHERTON thought, from his experience, that the borers commence to lay their eggs earlier than stated by Mr. Atkins. He had no doubt they commenced in May in some localities, and again in August and September.

Mr. BRIGGS advised examining the trees twice in every season—spring and fall. He agreed with Mr. Atherton in respect to the time when the borers deposit their eggs. Thought the earth should be replaced around the tree after the examination, and recommended preparations of carbolic acid for repelling the borers and for other beneficial uses about the trees.

J. C. DUDLEY, of Readfield, said he had had but little trouble from this species of borer, but more from another species working up around the limbs. Recommended washing the trees with soap, and seraping.

Adjourned.

AFTERNOON SESSION.

Met at 2 o'clock P. M.

Voted, That a selection of specimens of the fruit on exhibition be made and forwarded to the Massachusetts Horticultural Society; and Messrs. Blossom, Sweetser and Briggs were appointed as a committee for that purpose.

The following paper was then read, the author remarking that he had omitted considerable portions of the paper as originally prepared, on account of similar matter having been presented in the papers previously read at this meeting:

SOME DEFECTS IN ORCHARD MANAGEMENT.

By L. H. BLOSSOM, of Turrier.

What are the chief defects in our present system of orchard management? This question embraces a large field for discussion, and I shall attempt to touch upon but a few of the most important points.

In conversation with a noted farmer of our county, a short time since, I asked him if he was going to attend the pomological meeting at Gardiner. "Well," said he, "I don't know; what are you going to talk about down there?" "Oh," I replied, "we are going to try to learn something new about fruit raising, if we can." "Well," he replied, "if that is what you are going to talk about I shall stay at home. The fruit question is all worn out, has been talked to death, and is worn threadbare, and getting monotonous. No, I shan't go. I know all I want to about fruit raising now. It's all a humbug and I won't go." With that we parted.

Now, Mr. President, I know the subject is an old one, yet an ever new one. It has been written upon, been talked about, and studied upon by hosts of pomologists all over this broad land of ours, and the end is not reached yet. We are still somewhat in the dark in regard to several of the most important questions of fruit raising, and I hope to see them well discussed before the end of this meeting. In the hope of bringing out that discussion, I will mention some of the most prominent defects in the management of our orchards. And first among those I shall mention will be the size and age of our fruit trees when set in the orchard. For me, I want a three-year-old tree, at least not over four years old, and

from four to six feet high, and in diameter at the top of the ground, from one inch to one and a half inches, well rooted and the head low down. Give me such a tree as this, and a good, rich, strong, rocky soil to set it in, and when well set out in its proper position, I believe the fight is well begun and the battle half won. I remember last season I was passing by a newly set orchard, and the trees looked so much different from most of the newly set trees that I took the liberty to go and examine them; and while so doing, the owner put in an appearance, and in conversation with him I found that those trees were selected according to his own peculiar ideas of a tree fit to set in the orchard. They were from six to eight years old in the nursery, the bases of the trees were from one and one-half to two and one-half inches in diameter, and the tops were six feet from the ground. The tops had been cut off from year to year, and new shoots starting out, the trees had made from twelve to sixteen inches of new wood the last year they stood in the nursery. I asked him why he purchased that style of trees. He said he believed in starting right, and that it was cheaper to set trees of a bearing size and age, even if you had to pay from five to ten cents more for them than you did for these little three-year-old shoots. Now, I believe that that man committed a grave error at the start.

I want to say a few words about those insects injurious to the young trees, of which there are many. Among the most destructive, I will mention the borer, the louse, and the different species of caterpillar, against which we have got to keep an ever-watchful eye, or the error will cost us our orchards in the end. I think the worst of all the insects I have mentioned, the one that has cost the orchardist more than all the rest put together, is the borer, and how best to dispose of him is a conundrum not yet fully solved. Some recommend a solution of barn manure and water with a liberal sprinkling of Paris Green, made of the consistency of a thin paste, and with an old broom paint the butt of the trees from the ground up a foot or more. While this may act as a preventive to a certain extent, it is not safe to depend wholly upon this remedy, as a heavy shower or two will wash the most of it off. The best remedy I have found yet is the knife and wire.

Again, what is the best method of thinning the fruit on too heavily bearing trees? We often hear the complaint of trees over-bearing, and the fruit being small and poor. Now to such I would say, go and give your orchards something to eat, something from which

the trees can make good fruit of; then prune your trees out so the sunlight can enter and ripen the fruit. I don't believe in thinning out the fruit and leaving twice as many branches as ought to be on the tree, but prune intelligently and I think the fruit will be all right.

Of one more pest I wish to speak, and then I will close. That is the apple maggot. This little insect is, comparatively speaking, a new comer, and we all should study how best to receive him, and also how to get rid of him. We find them most common in our early fruits, in sweet apples especially. I know of some orchardists, when they find their fruit infested with the maggot, who leave the fruit on the ground to decay, which is most decidedly wrong. My experience with this pest in my orchards has been confined to two varieties of sweet apples—one a fall apple, the other a winter apple. I first discovered them three years ago in the early fruit, and two years ago I discovered them in the winter variety. My method of treatment has been this: To gather the fruit as soon as I discovered them in the apple, cook the apples and then feed them to the hogs. In this way I believe we can exterminate this most dangerous pest. In fact, it worked so well that in the case of the winter sweet apple I failed to find one of them infested with the maggot at the time of harvesting last fall. So I put them in the cellar and used them as we wanted until gone, without finding one affected. If any one has a better mode of disposing of them than mine I want to know what it is.

The Committee on the President's Address presented the following

REPORT.

The committee appointed to consider the address of the President beg leave to report: First, that they approve of his suggestion of the desirability of teaching horticulture in our schools, and that to aid this, public lectures be delivered from time to time by prominent men versed in the subject. Second, the suggestion in the address upon the manner of packing fruit is an important one, and they recommend that it be taken into consideration by all our fruit growers and fruit dealers; for the reputation which we have already established in the European market is an excellent one, second to that of no other country, and it is very desirable that this reputation be not only sustained, but be still further advanced by

honest packing and reliable branding. Maine fruit can stand on its own merits.

And the committee still further recommend another suggestion—a more general interest in the work of our Society which has done so much for the cause of pomology in the past, by the individual and united action of every member to solicit and encourage others to join our numbers.

Report accepted.

The Committee on New Fruits presented the following

REPORT.

The committee express their thanks to the several exhibitors for the interest they have taken in presenting specimens to the notice of the committee; and while recognizing the delicacy of their position with reference to the individual tastes and opinions of the exhibitors, they have endeavored to discharge their duty according to the best of their ability and judgment.

While the committee recognize the desirability of introducing and propagating new varieties of first-class quality, they would discourage the introduction of those of inferior or ordinary quality, so long as we have so large a number of good varieties already well known in the markets.

The following are the principal varieties to which our attention has been called:

Cooper's Market. Specimens presented by A. E. Andrews of Gardiner. Size medium, color red. A late keeper and good for cooking. Cannot be recommended, as we already have enough of that class.

Mann Apple. Exhibited by D. J. Briggs of Turner. Fruit coarse in texture and inferior in quality. Not to be recommended.

McIntosh Red. Exhibited by Orrin McFadden of Dresden. Size medium, color and quality good.

Norton's Melon. By W. R. Wharff of Gardiner. Size large, splashed and striped with red. Quality good, not best. Lacks firmness of flesh.

Ontario. Shown by J. Pope & Son and G. B. Sawyer. Fruit of good size. Yellow, splashed and slightly striped with red. Flesh slightly coarse. Quality good, rather acid. Specimens a little past their season.

Specimens exhibited by E. W. Dunbar of Damariscotta. Generally conceded to be the Westfield Seek-No-Further. Past the season, so that the quality could not be determined.

Russels. Exhibited by C. G. Atkins and grown by E. G. Colby of Bucksport, from New York trees. Evidently the so-called American Golden Russet of Western New York, and not the true American Golden Russet or Bullock's Pippin.

Specimens of a seedling sweet apple, grown and exhibited by C. H. Page of Winthrop, who considers it a superior baking apple. The committee do not regard it as of sufficient merit to warrant its propagation.

Specimens by H. B. Williams of Sidney. Tree bought from a New York nursery for R. I. Greening, but not true. Of large size, good for cooking.

Seedling by S.B. Friend of Winthrop, who says: "It originated in Winthrop. Tree, hardy. A profitable market variety, keeping till May." Specimens past their season, but so far as we could judge of it we have many better varieties, and cannot recommend it.

Report accepted.

The Committee on the Exhibition of Fruit at this meeting submitted the following

REPORT.

The exhibition is remarkable for the uniform excellence of the specimens and the general good character of the varieties exhibited. Nearly all the specimens are in a state of most perfect preservation, and afford additional proof of the late-keeping quality of Maine apples.

We have indicated the best three collections in their order, and, excluding these from further competition, have indicated the best collections from each of the several counties from which there is more than one collection, in the same manner. We have also indicated in some instances the best and second best dishes of the principal varieties.

The three best collections are :

First. S. R. Sweetser, Cumberland Centre, nineteen varieties,
viz :

Baldwin,

Northern Spy,

Ben Davis,

Hurlbut,

Hubbardston,	Spitzenburg,
Red Russet,	Yellow Bellflower,
Roxbury Russet,	Wagener,
R. I. Greening,	King of Tompkins County,
Red Canada,	Newtown Pippin,
Rambo,	Westfield Seek-No-Further,
Jewett's Red,	Three varieties Unknown.

Second. Miss Alice Foster, Gardiner, eighteen varieties :

Baldwin,	Mother,
Yellow Bellflower,	Nodhead,
Fameuse,	Ribston Pippin,
Fall Harvey,	Roxbury Russet,
Gravenstein,	Golden Russet,
Jersey Greening,	Talman Sweet,
R. I. Greening,	Holmes Sweet,
Hubbardston,	Richards Sweet,
Minister,	Ladies' Sweet.

Third. W. R. Wharff, Gardiner, fourteen varieties :

Hubbardston,	Yellow Bellflower,
Norton's Melon,	Roxbury Russet,
Northern Spy,	R. I. Greening,
Golden Russet,	Black Oxford,
Winthrop Greening,	Wine Apple,
English Russet,	Hubbardston Pippin,
Ribston Pippin,	King of Tompkins County.

ANDROSCOGGIN COUNTY.

First. D. J. Briggs, South Turner, nine varieties :

Talman Sweet,	Fall Pippin,
Northern Spy,	English Russet,
Black Oxford,	Roxbury Russet,
Baldwin,	One variety Unknown.
King of Tompkins County,	

Second. L. H. Blossom, Turner, eight varieties :

Baldwin,	Talman Sweet,
Black Oxford,	Roxbury Russet,
Northern Spy,	Spitzenburg,
Cooper's Market,	R. I. Greening.

KENNEBEC COUNTY.

First. J. M. Carpenter, Pittston, thirteen varieties :

Winthrop Greening,	Northern Spy,
Blue Pearmain,	<i>Pittston Beauty</i> ,
Nodhead,	Yellow Bellflower,
Fallawater,	Talman Sweet,
Roxbury Russet,	Golden Russet,
R. I. Greening,	Danvers Winter Sweet.

Second. E. A. Lapham, Pittston, sixteen varieties :

Talman Sweet,	Gravenstein,
Yellow Bellflower,	Peck's Pleasant.
Northern Spy,	Fall Pippin,
Ribston Pippin,	Ben Davis,
Hubbardston,	American Golden Russet,
Roxbury Russet,	Winthrop Greening,
Baldwin,	Two varieties Unknown.
R. I. Greening,	

Third. E. G. Hooker, Gardiner, fourteen varieties :

Northern Spy,	Spice Sweet,
Yellow Bellflower,	Talman Sweet,
One variety Unknown,	Hubbardston,
R. I. Greening,	Roxbury Russet,
<i>N. Y. Steele Baldwin</i> ,	Ribston Pippin,
Winter Sweet,	Winter White,
<i>Russet</i> ,	Peck's Pleasant.

A. E. Andrews, Gardiner, eight varieties :

Yellow Bellflower,	Northern Spy,
Peck's Pleasant,	Roxbury Russet,
Hubbardston,	Talman Sweet,
Red Canada, <i>Best</i> .	Cooper's Market,

J. Pope & Son, Manchester, nine varieties :

King of Tompkins' Co., <i>Second</i> .	Peck's Pleasant,
Baldwin,	Mother, <i>Best</i> .
Fallawater,	Starkey,
Talman Sweet,	Minister.
Ontario,	

J. R. Peacock, Gardiner, ten varieties :

Yellow Bellflower,	Black Oxford,
Talman Sweet,	R. I. Greening,
Vandevere,	Nodhead,
Roxbury Russet,	Northern Spy, <i>Best</i> .
Hubbardston,	Colvert.

R. H. Gardiner, Gardiner, ten varieties :

Yellow Bellflower, <i>Best</i> .	Peck's Pleasant,
Northern Spy,	Ribston Pippin,
Blue Pearmain,	Talman Sweet,
Baldwin,	Fameuse,
Richard's Graft (Strawberry),	Porter.

S. R. Lapham, thirteen varieties :

Baldwin, <i>Best</i> .	Talman Sweet,
Hubbardston,	Ben Davis,
R. I. Greening,	Late Strawberry,
Roxbury Russet,	Porter,
Golden Russet,	Three varieties Unknown.
Yellow Bellflower, <i>Second</i> .	

Augustus Jordan, Gardiner, one variety :

Yellow Bellflower.

George Woodworth, four varieties :

Yellow Bellflower,	R. I. Greening,
Talman Sweet,	One variety Unknown.

John O. Willey, six varieties :

Hubbardston,	Yellow Bellflower,
Roxbury Russet, <i>Second</i> .	Talman Sweet,
Baldwin,	Red Canada.

Charles H. Page, Winthrop, four varieties :

Jewett's Red,	Hubbardston,
Yellow Bellflower,	Peck's Pleasant.

LINCOLN COUNTY.

First. G. B. Sawyer, Wiscasset, seventeen varieties :

R. I. Greening,	Peck's Pleasant,
Hurlburt,	King of Tompkins County.

Vandevere,	Hubbardston,
Ontario,	Baldwin,
Fameuse, <i>Second</i> .	Northern Spy,
Winthrop Greening,	Danvers Winter Sweet,
Starkey,	Three varieties Unknown.
Lyscom,	

Second. Henry Ingalls, Wiscasset, nine varieties :

King of Tompkins County,	American Golden Russet,
Wagener,	Swaar,
Mother,	Danvers Winter Sweet,
Yellow Bellflower,	Bottle Greening.
Northern Spy,	

E. W. Dunbar, Damariscotta :

One variety, Unknown.

Orrin McFadden, Dresden, four varieties :

McIntosh Red,	<i>Western N. Y. Russet,</i>
Wagener, <i>Best</i> .	Northern Spy.

FRANKLIN COUNTY.

G. K. Staples, Temple, fourteen varieties :

Peck's Pleasant,	R. I. Greening,
Golden Russet,	Seek-No-Further,
Colvert,	Hubbardston,
King of Tompkins County,	Rambo,
Twenty Ounce,	Talman Sweet,
Baldwin,	Mann Apple,
Northern Spy,	Derry Pippin.

HANCOCK COUNTY.

C. G. Atkins, Bucksport, seven varieties :

American Golden Russet,	<i>Russet,</i>
Hunt Russet,	Jonathan,
Roxbury Russet,	<i>Russet.</i>
<i>Russet,</i>	

Mrs. M. E. Thomas, Rockland, one parlor bouquet.
 Miss Sophronia Hopkins, Gardiner, one pot plant (Primrose).
 Miss L. M. Pope, Manchester, cut flowers in baskets.

Several other contributions were received after the list of entries was made up and our examination had been completed.

Report accepted.

Letters were read from the following absent members and others, viz :

Granville Fernald, Bridgton, formerly Corresponding Secretary.

Mrs. M. E. Thomas, Rockland, accompanying a bouquet of flowers.

S. R. Leland, Farmington.

Dr. J. A. Morton, Bethel.

F. E. Nowell, Fairfield, Member of Executive Committee, detained by sickness.

Henry S. Smith, Monmouth, announcing the recent death of his father, Alfred Smith.

S. W. Shaw, Minot.

C. G. Atkins, Bucksport.

EXTRACTS FROM LETTERS.

GRANVILLE FERNALD—"Although not now actively engaged in the cultivation of orchard fruits, I am by no means an uninterested reader or observer of the evidences of improved modes of fruit farming; and I fully believe in the important mission of the Maine State Pomological Society. It is a great educator, and whoever comes in contact with it receives light and stimulus to aid in building up the rural industrial fabric, and developing to all needed uses and extents the wonderful native resources of our soil and climate. In my travels, I have observed in every place unmistakable proofs that the influence of our State Society has reached the remotest parts of the State."

S. W. SHAW—"I am an invalid this winter and shall not be able to attend our meeting at Gardiner, to-morrow, as I would be very glad to do. I trust the time will be fully and profitably occupied, awakening an increased interest in the work of the Society, and adding materially to its permanence and future success. Without attempting to write a formal paper for the occasion, I will simply invite attention to some facts and considerations, which I hope may, in some way, be brought to the attention of the meeting.

It is well understood that nearly all farm products have sold since the last harvest at very unsatisfactory prices. In many cases the

home markets became almost wholly glutted. Over-production is doubtless a partial cause for this state of things. Outside competition is also a matter of concern to us, of which we are likely to have more in the future.

Under this state of things the apple is assuming a preeminence over almost every other crop sold from the farm. Since the opening of the shipping season a brisk demand has sprung up at remunerative prices, shippers taking them at the homes of the growers. They are now paying two dollars per barrel for Baldwins in fair condition.

The foreign market is almost certain to improve as our people become better acquainted with the best methods of harvesting and caring for the crop, preparatory for the market. Reports of sales in England indicate that the superiority of Maine fruit is there becoming better understood. In Boston, Maine apples, for shipping purposes, are quoted twenty-five cents per barrel higher than Massachusetts fruit, all going to show that whatever crop fails to find a satisfactory market, the apple, in the future, is not likely to be one of that class. The proper selection of varieties demands careful consideration. In Androscoggin County that matter is taking care of itself. Shippers prefer and take all Baldwins offered, while other varieties are taken sparingly. Consequently, the Baldwin, for that reason, as well as from its adaptability to different soils and its productiveness, is the general favorite here.

The question, Who should raise apples? also demands attention. Not every one, certainly, who owns land should undertake it largely, though every owner of only one acre should cultivate a few trees. Orchards will not flourish on some soils—some locations are unfavorable to their growth, and he should let orcharding alone who has no faith in it and regards an apple tree as an unsightly thing or only as a cumberer of the ground."

The remainder of the afternoon session was occupied with a

DISCUSSION OF VARIETIES.

Mr. GILBERT, being called upon to open the discussion, said: I hardly know what branch of work, in regard to the fruit lists, you would like to take up. It hardly seems to me possible or necessary that we should take it in order, and make an examination of the entire list. There are some varieties urged upon our attention

which are not generally well known and which, it seems to me, that it might be well to discuss, in order to find their merits and demerits. The *Alexander* is still attracting some attention. I have learned something in regard to it, during the past year, from inquiry as to the demand for it in the market; of course that affects the desirability of the fruit. It certainly appears to be undesirable for some sections of the State. Being in Portland last fall, and studying, of course, the fruit stands and the fine show of fruit made, I saw, on nearly every stand in the city, large dishes, and sometimes counters, filled with the *Alexander*. It makes a very fine show and attracts attention. I asked the proprietor of one of the stands in regard to it, and if they had a good sale for it. Said he, "No, we buy about one bushel and keep them for show. It is not an apple that sells." If this is the appreciation of the market in regard to the apple, certainly we do not want it as a market fruit. It is classed, of course, with cooking apples, but I have no sympathy with an apple that is only a cooking apple, because it sells for a low price. We have the *Alexander*, *Twenty Ounce*, *Duchess of Oldenburg* and *Colvert*, which are all of the same nature, and while good, rich apples sell at \$2.00 per barrel, these sell at \$1.00 or \$1.25. It costs no more to raise good apples than poor ones. I know of no reason why we should recommend these cooking apples to the public attention. There is no room for them in any section where better apples can be grown, and I would include the *Alexander* in this list. It is, in the northern section of the State, a richer and better apple than when grown on the coast, but it is not wanted in the central and southern parts of the State.

If, Mr. President, you have not a list of such fruits as you wish to take up, I would then call up the *McIntosh Red*, referred to just now by the committee.

MR. BLOSSOM. I will say, in regard to that, that I have two trees in bearing, which probably bore last year one-half barrel of apples, and I failed to find one that was eatable. they cracked as badly as the *Flemish Beauty* pear, and were all spotted and very inferior in appearance. I wish I could raise as good specimens as those here on exhibition.

MR. CARPENTER. Mr. McFadden of Dresden, who exhibits it here, has one tree of it standing in a favorable situation, east of the *Kennebec River*, and he speaks very highly of it.

MR. GILBERT. I have been compelled to investigate this fruit somewhat. It has been offered for sale, and pressed very earnestly to the attention of our fruit growers; and, in order to make it especially attractive, an extra price has been put on the trees; and, being frequently consulted in regard to the merits of the fruit, I have felt compelled to learn what I could in regard to it, and, that I might be certain in regard to the apple and that it was correctly named, I sent to Dr. Hoskins of Newport, Vermont, for samples of the fruit. He very kindly sent me some, carefully packed, and the apple now set before us for examination is the same variety of fruit. It is, without question, the McIntosh Red, and the gentleman from Turner says that if he could raise as good fruit as that, he would like to raise it. Now I would ask him, what for? Has he really considered the reason, and whether he does want to raise it, or not? In the first place, what are the characteristics of the apple? Let us be careful that we study it aright, and find out all about it. The tree is hardy, and the indications are that it is a good bearer. It is one of that family of fruits which is called the Fameuse family, and our fruit growers know what that means. It has the characteristics of the Fameuse; and those are, soft flesh and thick, tough skin, and every one of these varieties is subject to this mould, which attaches itself to the Fameuse, and especially so on high lands. The Wealthy and the Bellflower are also grown better on low lands. If you have such land, and feel that you must grow fruit on it, you can introduce this variety. The quality is very good indeed. The indications are that it is not a late keeper—it may carry well till the middle of winter. You will find that, as it becomes soft, the skin will pull away from the fruit very easily, and the pulp will become soft while the skin is firm. The fruit is soft and does not handle well; it bruises easily, like the Bellflower, and it has to be handled with extreme care. It may be desirable to have it for home use, but for a staple product, and to fill this great demand which we are all aiming to meet, it does not possess those qualities which will enable it to be handled to so good advantage as the old standard Baldwin. I don't believe that we want any more of these varieties that are only good for home use.

MR. GARDINER. I want to speak of an apple which I think is not generally grown in this vicinity, which I have always called the Strawberry, but I have discovered that Downing gives the name of it as *Richard's Graft*. We have had it on my place forty or fifty

years. My impression is that it is of English origin. It is a very nice apple. They have kept very well indeed up to this time, but I should not consider it as good for eating, except in November or December. It bears every year, and is a very good apple, but might not be profitable for a market apple.

MR. SWEETSER. I think the apple that Mr. Gardiner speaks of is the *Moody* apple. It originated in New Hampshire. We have it in the Portland market, and consider it a very rich, nice apple, and it is very handsome. All I know in regard to it is what I have read and seen of it in the market, and I have bought twenty trees on the strength of that. My idea is that, in localities where there is a home market for it, it is a very valuable apple, but for shipping, I think no apple will take the place of the Baldwin.

MR. SAWYER. I wish to call attention to the

Starkey, an apple which we have known for a good many years, and which originated in Vassalboro', in this State. It seems to me it is worthy of more general attention than it has received. It is an apple of remarkably fine quality, good appearance, a thrifty grower, bears annually and abundantly, and is a better apple, it seems to me, than any one of twenty varieties we might name. I think it is better than the Wagener, McIntosh, Hubbardston and a good many others on the list. There are other gentlemen who know more about it than I do, and I only desire to call attention to it.

THE PRESIDENT. All I should say would be in its favor—that it is an early and abundant bearer, and a very choice eating apple, and that there is a great demand for it wherever it has been introduced.

MR. GILBERT. How does it compare with the Baldwin in size?

THE PRESIDENT. It is not quite as large; they all grow very fair, however, and there is but little waste.

MR. GILBERT. What is the character of the wood?

THE PRESIDENT. It is good, firm, white wood. Here is another apple called the

Dean, which originated in Temple. It is one of our choice fall varieties—white flesh, and so mellow that when it is fit for eating you can press it in your hand.

MR. GILBERT. I think there is, in quality, no better apple among us, and certainly it is far superior to many other varieties. It is a heavy, firm fruit, that handles well in packing.

Mr. BRIGGS. One advantage is that it is a very smooth, large and well-shaped apple, and its size and general appearance recommend it for a market variety.

Ontario. Mr. SAWYER. The scions of this variety were sent to us a few years ago by Mr. D. W. Beadle, Secretary of the Ontario Fruit Growers' Association. It is said to be a hybrid from the Northern Spy and Wagener, both of which it resembles in some respects.

Mr. SWEETSER. Judging from the fruit as seen here, I should not think it as good as either of those varieties.

Westfield Seek-No-Further. Mr. BRIGGS. It is a hardy tree, but the apples are not very good for eating. It bears well and has a tolerably good sale. The apple will keep till apples come again, with proper care.

Wealthy. Mr. SWEETSER. It is not as good an apple, in my judgment, as the McIntosh Red. It is quite small. It is claimed that it will keep till March; but I should call it an early apple.

Mr. GILBERT. I have made some inquiry in regard to its keeping qualities. Its quality of flavor is in its favor, but I have yet to learn that it is of any especial value; and I think we should be very cautious about recommending it.

Talman Sweet. Hon. J. L. STEVENS. Is there no remedy for the unnatural growth that spoils a considerable portion of the fruit of the Talman Sweet? One side will be round and well developed and the other shrunk. Possibly it requires a peculiar soil; mine is a clayey loam.

Mr. SWEETSER. I have had but one tree of it, and if I could do no better with another than I have with that, I never want any more. The apples are generally small. I am ashamed to take them to market. The tree stands in as good a place as I have. I think it may be something in the soil.

Mr. CARPENTER. By taking better care of the trees we will get better fruit. The fruit is firm and sells well, if we only have enough to make it an object. I have no doubt that they can be improved in some way.

Mr. SAWYER. I think the *Danvers Sweet* is a more profitable apple than the Talman.

Miss FOSTER. I think just the contrary.

Mr. CARPENTER. My *Danvers Sweet* apples grow well, but do not keep well.

Mr. SAWYER. I think that whoever can raise the Danvers Sweet successfully, has as good an apple as the Talman Sweet. It is a thrifty, hardy tree, bearing some every year, and every other year abundantly, as the Baldwins do.

Mr. GILBERT. I have learned that the agents are selling the *Rolfe* apple. I think it would be well for the Society to put itself on record in regard to this fruit.

The PRESIDENT. I saw the apple last winter for the first time, and liked the appearance of it very much. It is not a very late keeper.

Walbridge. Mr. BRIGGS. It is a good sized apple, colors well, a good winter apple, but not a good keeper.

Adjourned.

EVENING SESSION.

The committee appointed to select and forward a collection of apples to the Massachusetts Horticultural Society, reported that in the performance of the duty assigned to them they had selected from the fruit on exhibition, and forwarded as directed, with the compliments of the Society, a collection of forty-three varieties of apples, as follows: American Golden Russet, Baldwin, Ben Davis, Black Oxford, Bottle Greening, Cooper's Market, Danvers Sweet, Derry Pippin, English Russet, Fallawater, Fameuse, Fall Harvey, Gravenstein, Hubbardston, Hubbardton Pippin, Hunt Russet, Hurlbut, Jewett's Red, Jonathan, King of Tompkins County, Lyseom, McIntosh Red, Minister, Moody, Mother, Newtown Pippin, Norton's Melon, Northern Spy, Ontario, Peck's Pleasant, Rambo, Red Canada, Red Russet, Rhode Island Greening, Ribston Pippin, Roxbury Russet, Spitzenburgh, Starkey, Talman Sweet, Vandevere, Wagener, Winthrop Greening, Yellow Bellflower.

Report accepted.

A letter was subsequently received from Mr. Robert Manning, Secretary, in which, after acknowledging the receipt of this collection, he said: "In behalf of this Society I desire to return thanks to the Maine Pomological Society, for this fine collection of apples, which were of much interest to our pomologists. They were placed on exhibition on the 28th of February, and as we happened on that day to have some fine roses, camellias, etc., contributed quite freely, as also vegetables, the whole made up much the best display we have

had this season, to which your apples were a very valuable contribution."

Mr. W. H. KEITH of Winthrop, an extensive orchardist, and also largely engaged in packing and evaporating fruit, was invited to open the discussion on any subject suggested by his own experience. He said,

Mr. President: I did not come in with the expectation of being called upon to say anything, but rather to listen to those who have had more experience than I. However, I will just say that this year I have been using new barrels, and that I like them for the reason that it did not take more than half as long to pack the apples as it did to get those barrels ready that we used to pick up. I think that it would be a wise plan for all of us to adopt the practice of getting new barrels to pack our apples in.

Question. Please tell us what barrels you use and what they cost.

Mr. KEITH. My barrels were made in Vienna, Maine. They are supposed to be of the same size as flour barrels, but I have never compared them. The staves were made of spruce, but they can also be made of fir or poplar, to good advantage; and the hoops generally had the bark left on them. They make a very neat, inviting-looking barrel. I believe if we would make a little effort, it would enhance the value of our product of apples in making sales. I don't know what the price of flour barrels has been this year, we used to buy them and I think we had to pay twenty-five cents for them—the same price that I paid for the others at the factory.

Mr. BRIGGS. We pay twenty cents in Androscoggin County.

Mr. SAWYER. In our locality we pay fifteen cents.

Mr. KEITH. Some of our people have bought barrels in Augusta for fifteen cents.

Mr. SWEETSER. We have to pay twenty cents in Portland.

Mr. KEITH. I think the only obstacle to establishing a barrel factory would be this: there are a great many who would not pay twenty-five cents for a new barrel, if they could get an old one for fifteen cents.

In regard to evaporating apples, I have been in the business for the last five or six years. I use the American evaporator. It takes a crew of five or six men to run the evaporator properly, and it costs seventy-five cents per day to heat it. This year I have evaporated about nine hundred barrels of apples. I had quite a large quantity of New York Russets, and also of Winthrop Greenings,

which I evaporated this year, but the Baldwin is the best apple we have for evaporating. The Roxbury Russet produces more in pounds than any other apple that we have used.

Mr. SAWYER. Is the evaporated fruit injured by keeping from one season to another?

Mr. KEITH. I think not, if kept in good condition.

Mr. SWEETSER. How is the Red Astrachan for evaporating?

Mr. KEITH. I consider it a fine apple for that purpose.

Mr. BRIGGS. Do you utilize the refuse from the factory?

Mr. KEITH. I never have. A barrel of second quality Baldwins will yield about five pounds of evaporated apples. I reckon my expenses from twenty to twenty-five cents per barrel, which would be about five cents per pound for the cost of the apples. We can safely reckon them at twelve and one-half cents per pound on an average. Even this year I do not reckon on selling at less than ten cents per pound.

Mr. SAWYER. Do you run your evaporator in the winter?

Mr. KEITH. I usually finish work in November.

Mr. SAWYER. Do you burn coal or wood?

Mr. KEITH. I burned coal this year, but I have usually burned wood.

The PRESIDENT. Is it not with evaporated fruit as with green fruit — should not there be a large difference made in the price of the product?

Mr. KEITH. Yes sir, that is what is depressing the market now.

The PRESIDENT. Do you use anything to whiten the product?

Mr. KEITH. Yes, it has to be bleached. It does not impair the quality of the fruit, however, if it is properly done. It is only the fumes of the sulphur when it is put on, after they are dried.

The PRESIDENT. Then there is no necessity of it, except for the looks?

Mr. KEITH. That is all. The first year I evaporated apples, I did not bleach them; then it was not generally practiced as it is now; but I found that the next year the demand was to have it bleached. I suppose there is quite a difference in the kind of evaporator used. The American evaporator is undoubtedly the best one for any farmer's use. This evaporator can be set up anywhere, under cover; out of doors, it can be used to great advantage.

Mr. SAWYER. Is there no waste of heat by its being out of doors?

Mr. KEITH. No, sir. The small evaporator, the second size, costs \$75.00, and any one who does not have more than two hundred

bushels of apples a year, could easily get them through on that evaporator. The larger size costs \$200.00. The price is \$175.00, but the freight makes it cost more. Only one man is needed to run the smaller one. One girl can run it, unless you should run it night and day, and in that case you would want two men. That will turn out from three to four bushels in twelve hours. In regard to selling the second quality fruit, if you can dispose of it at \$1.25 per barrel, and it is not worth any more than it is this year, you can easily figure that it would be better to dispose of it green, but if apples are worth more, as they were last year, it is better to evaporate them.

I would like to inquire of the gentlemen present if they have ever experimented with any of the different kinds of commercial fertilizers, for their trees?

MR. R. C. PLAISTED. I have used nothing of the kind. I have used ashes, which I obtain in this city.

MR. KEITH. I suppose there is no doubt that, with most soils, ashes are as good as anything we can use. I have used a preparation put up by the Bowker concern, which gives me very good satisfaction, but I have not used it extensively enough to recommend it. For myself, if I could get plenty of ashes, I would not wish for anything else.

MR. BRIGGS. What do you consider ashes worth for fruit culture?

MR. KEITH. I would pay twenty-five cents per bushel for two hundred bushels, every year.

THE PRESIDENT. I would pay thirty cents per bushel for two hundred bushels. How do you apply the ashes?

MR. KEITH. Around the body of the tree. If I had plenty of them, I would extend them out as far as the branches go.

MR. SAWYER. I would like to call attention to the article written by Dr. Nichols, in the report of last year. The title of this article is, "The Sweet Principle In Fruits". It is a very valuable and interesting paper. [Paragraph read.]

MR. PLAISTED. I find bone dust more profitable than ashes, on grass land.

THE PRESIDENT. I want to say that ashes are about worthless on some lands, and on others they are valuable.

MR. KEITH. What is your process of using the bone dust?

MR. PLAISTED. I simply scatter it broadcast.

MR. SAWYER. Can you advise us what manufacture is the best?

Mr. PLAISTED. There was a factory in Gardiner, formerly. The easiest way is to have a boiler and steam the bone twenty-four hours. The steam dissolves the bones and they can then be readily ground or pounded.

Mr. KEITH. I suppose you could not advise that way for all of us, small farmers?

Mr. PLAISTED. Yes, indeed. You would get grease enough out of it to pay for your labor. At the Cumberland factory in Boothbay they manufacture bone dust in just this way. It is the original German method.

Mr. SAWYER. I understand you that you subject the bones to the steam for twenty-four hours. What pressure do you have?

Mr. PLAISTED. We need a pressure of twenty pounds steam. It requires that amount of heat to dissolve the bones. It takes out all of the gelatine, and leaves nothing but the lime.

Mr. KEITH. Does it not impair the value of it to steam it?

Mr. PLAISTED. I think not. I think the phosphate of lime remains the same. The gelatine is dissolved, and that is not lost, for it comes to the surface.

Mr. SAWYER. You would not recommend any one ordinary farmer to do that for his own supply?

Mr. PLAISTED. Yes, sir; it does not cost much.

The PRESIDENT. This is more fertilizing in the orchard, by spreading it on the surface. We have to experiment with different kinds of fertilizers, and we would have to look sharp to see if we get any benefit from it; the grass would steal it all.

Mr. PLAISTED. We spread a good fair supply of stable dressing around the trees.

Mr. SAWYER. I believe in nature's methods, muck and leaf-mould. There is nothing quite so good, especially in an orchard. I think it is good on any soil.

Mr. KEITH. In young orchards, how long have you, Mr. President, made it a practice to keep the soil plowed up before allowing it to go to grass?

The PRESIDENT. Until within two years, we have never plowed at all.

Mr. KEITH. Have you ever grown any of the early fruits, such as the Duchess?

The PRESIDENT. Only for our own use.

Mr. KEITH. Has any one here had any experience with them?

Mr. SWEETSER. We have only raised them for our own use.

Mr. KEITH. Do you regard the Duchess as a hardy tree?

Mr. SWEETSER. Yes, and it is a great bearer.

Mr. SAWYER. Is there not more profit in forcing these trees for all there is in them, than there is in spinning it out over thirty years?

Mr. SWEETSER. I think so.

Mr. PLAISTED. Is there any such thing as driving trees so as to injure them?

Mr. SAWYER. I don't think there is. I think there is such a thing as retarding them.

Mr. PLAISTED. Does driving them shorten their lives?

Mr. SAWYER. I think not.

Mr. PLAISTED. Then why not say that more trees die by starvation than by forcing?

Mr. SAWYER. I think you would be about right.

The PRESIDENT. Is there not danger of forcing and getting the growth too late in the season?

Mr. PLAISTED. I never saw any trouble of that kind, but there may be.

Mr. KEITH. I suppose that the Baldwin tree is not regarded as being as hardy as the Astrachan or Duchess?

Mr. PLAISTED. I don't know about that; I have no Astrachan trees.

Mr. KEITH. You have Baldwins?

Mr. PLAISTED. Yes, and a good many of them are grafted in the limbs.

The PRESIDENT. Would you not prefer trees grafted in the limbs to those grafted in the nursery and at the crown?

Mr. PLAISTED. I do not observe any difference; still, it depends on how the tree is grained. I do not know but the wood of the Baldwin tree is straighter grained and more liable to split than some other varieties would be.

Mr. KEITH. Judging from what I have seen of the Baldwin tree, and what I have been told about the Duchess, I should feel like driving the Duchess twice as hard as I would the Baldwin.

Mr. SAWYER. I have but one tree of the Duchess; some of the limbs have split off, from the weight of the apples, and it split as badly as ever I saw the Baldwin.

Voted, That a committee of three be appointed by the Chair to be known as the 'Committee on Nomenclature,' and that the subject of the changes in the nomenclature of fruits, recommended by the American Pomological Society, be referred to said committee. The following persons were appointed as such committee, viz: George B. Sawyer, Z. A. Gilbert and D. J. Briggs.

Voted, That Miss Alice Foster of Gardiner be added to the Committee on New Fruits, and that the committee as thus constituted be continued for the ensuing year.

Voted, That the Executive Committee be instructed to consider the propriety of reducing the number of varieties of apples in the premium list of the annual exhibition.

The following resolutions were presented and adopted:

Resolved, That the thanks of this Society be and hereby are extended to the people of Gardiner, for the liberal arrangements made for holding this meeting, and for the renewed manifestation of their interest in the welfare of the Society; also to the local committee and those citizens who have co-operated with them in perfecting the arrangements for this meeting.

Resolved, That the thanks of the Society be extended to the Maine Central Railroad for its reduction of fares; to the several persons who have presented papers and reports, and to the newspaper press and reporters for their extended and faithful reports of the proceedings.

IN MEMORIAM.

CHARLES DOWNING died at his home, in Newburgh, New York, January 18th, 1885, in the eighty-second year of his age. The following sketch of his life and character and achievements is taken, in an abbreviated form, from the address of President Barry at the last annual meeting of the Western New York Horticultural Society :

"In early life, and until about thirty years ago, Mr. Downing was actively engaged in the nursery business, in which he was distinguished as well for his skill and success as a practical cultivator, as for his accuracy and trustworthiness in all matters pertaining to the varieties of fruits or of ornamental trees and plants, cultivated and sold by him. When anything was purchased from Charles Downing, that alone was regarded as a proof of its genuineness. A more careful, conscientious man has never been known in that business.

"Shortly after the death of his gifted and greatly lamented brother, Andrew J. Downing, author of "The Fruits and Fruit Trees of America," and of several works on landscape gardening and rural architecture, Charles retired from the nursery business, and from that time until his death devoted himself to the study of pomology, and to the revision from time to time of his brother's great work, "The Fruits and Fruit Trees of America." This book is regarded as the standard authority on American fruits throughout the world, and Charles Downing came to be acknowledged one of the foremost pomologists of his day. He was a remarkably modest and retiring man by nature, and, although a regular attendant at both pomological and horticultural meetings, was seldom heard to speak, except when called upon for his opinion, which he would give with absolute frankness and honesty, but in the fewest possible words. He was not in haste to form an opinion, but when once formed he adhered to it steadfastly.

"The name of Charles Downing is as familiar as a household word in every American home where an intelligent interest is taken in rural affairs. * * * Who will take his place? is a question that will be asked. Who will keep up the standard character of "The Fruits and Fruit Trees of America" by constant revision, as he did? It is a national work, and I trust that for the

sake of the memory of the brothers Downing, as well as for the honor and interest of American pomology, it will pass into careful, able and loving hands, who will perpetrate it through future generations."

These are the words of one well qualified by long acquaintance and intimate association, as well as by similarity of occupation and tastes, to form a just estimate of the character and labors of Mr. Downing. In a letter to the writer of this notice, in 1882, Mr. Downing said:

"I much prefer the practical part of horticulture, and would rather work a week in the open air than to write a day; in fact, I have not the taste nor the ability to perform the work as it should be, and the revisions of my brother's Fruit Book were prepared at the earnest solicitation of his and my friends and much against my will, knowing that I was not able to do it justice. I intended and expected to make a new revision, * * * but it is too late now, as my health and strength are not sufficient for the labor."

Many extracts might be made from his letters, several of them written after his partial recovery from the painful accident which came so near terminating his life, all illustrating the modesty and self-abnegation which were prominent traits in his character, and his devotion to his chosen labor.

He always manifested a deep interest in the work of this Society, and was a careful and discriminating reader of its transactions. On several occasions he expressed a strong desire to attend our meetings, and was only prevented from doing so by the infirmity of his health. He was often appealed to by our members for the settlement of vexed questions in pomology; and he always investigated patiently and answered courteously, and frequently would write to them to make suggestions or ask for information on some point which had attracted his attention in our proceedings. For these reasons, as well as for his pre-eminence among pomologists, though not a member of our Society, it is fitting that we should place his name at the head of our memorial notices at this time. No society could call him its own to the exclusion of others. He belongs to every organization and every individual interested in the advancement of horticultural knowledge.

G. B. S.

FRANCIS GARDINER RICHARDS was born at Gardiner, June 10th, 1833, and died in Boston, February 10th, 1884. He received his early education in England and graduated at Harvard College in 1853, and for some time studied law, but abandoned it and decided to go into business. He made a voyage to Calcutta, but, in 1858, on learning of the death of his father, Francis Richards, of the firm Richards & Hoskins, paper makers, at Gardiner, he returned and took charge of his father's business, and, taking the paper mills, carried on a most successful business. He married Miss Ashburne in 1879. His widow and two children survive him. For many years he was an active business man—one of the trustees of the Gardiner Savings Bank, a director of the Cobbossee National Bank, and always one of the Vestry of the Episcopal Church. His death was a great loss to the community.

Mr. Richards became a life member of this Society in 1881, and always maintained a deep interest in its welfare.

G.

HON. JOHN E. GODFREY died at his home in Bangor, February 20, 1884. He had been unwell for several days, but on the day of his decease was feeling much better. Between five and six o'clock he sat with his little daughter in his arms, playing with her and laughing at her childish frolics. Suddenly he threw back his head and in two minutes life had departed. Heart disease was the cause.

Judge Godfrey was born in Hampden, September 6th, 1809, the son of John Godfrey, Esq., for many years a prominent member of Penobscot Bar. When he was about twelve years of age, his father removed to Bangor, and after that time the subject of this notice made his home there.

Adopting the legal profession, he was admitted to the Penobscot Bar, of which he continued for many years a prominent and honored member.

He filled many positions of trust in his city and county, having been a member of the Common Council of the city four years, and of the Board of Aldermen three years, and was on the Superintending School Committee twenty or thirty years. In 1856 he was elected Judge of Probate for Penobscot County, and was re-elected seven

times, discharging the duties of that important office with great ability and to the entire satisfaction of all, from January, 1857, to January, 1881, a period of twenty-four years. He was President of the Bangor Historical Society and a member and contributor of the Maine Historical Society. He also took a deep interest in music, and for a number of years was President of the Penobscot Musical Association and also of other local musical organizations. He was always an anti-slavery man, and was one of the formers of the Republican party, and always an earnest advocate of its principles. He contributed to Griffin's "Press of Maine," a history of the press of Penobscot County. He was also a poet of considerable ability. He leaves a wife and a little daughter; also two sons by a former marriage.

Judge Godfrey was a man of great culture and fine tastes, and his late home is a lasting monument to his love and appreciation of the beautiful. He took a deep interest in horticultural affairs, and was for many years an active member and an officer of the Bangor Horticultural Society. He became a life member of this Society in 1873, and at the first annual exhibition, at Bangor, delivered an able and interesting address, which was published in full in the transactions of that year.

COM.

ALFRED SMITH, one of the life members of this Society, was a son of Isaac Smith, who, with his father, Capt. Nathaniel Smith, moved to Winthrop, Maine, from Middleboro', Mass., about the year 1795. He was born July 18, 1807, on the farm where his father died at the age of ninety, and where he had lived for about sixty years. His early education was only what the district school afforded at that early date, with a few terms at an academy in an adjoining town; but he made such good use of his opportunities that he began teaching at the age of eighteen, and followed it closely during the winter season, working upon the farm in summer, until he was twenty-five years of age. During this period he taught two years in Massachusetts, meeting with so much success that he was several times invited to take permanent situations as a teacher in private educational institutions, which he declined. This he did because he began to tire of teaching and to turn his mind more to

farming as an occupation. During all his years of study, chemistry and the natural sciences had been favorite branches of knowledge with him, and in the former he made considerable proficiency. These studies trained his mind to habits of observation and inquiring into the action of Nature's laws, which gave him a good fitness to write upon questions concerning orcharding, plant growth, etc., which he did to quite an extent in the latter years of his life. Although he practically abandoned teaching as a business when he began farming, he continued to teach school winters for many years, teaching his last term at the age of fifty-two years.

Mr. Smith married, December 1, 1832, Mary F. Shaw of Winthrop. Their family consisted of six sons, one of whom, Henry S., lives on the old farm in Monmouth; and one, Prof. George Boardman, resides in Houlton, a teacher of acknowledged ability. His widow, a lady of estimable Christian character, fine sensibilities and true benevolence, still survives, and resides with her son in Monmouth. Mr. Smith lived in Winthrop until the year 1862, when he moved to Monmouth and purchased a farm on the shore of Lake Cochnewaggin, where he continued to reside till his decease.

At the early age of sixteen, Mr. Smith united with the Baptist Church and ever continued a consistent member of the same. In 1848, when the anti-slavery controversy was beginning to assume form and shape as a social and political factor, Mr. Smith was one of three, out of over thirty male members of his church who were bold, outspoken and earnest in their opposition to human slavery. They voted as they believed and talked, and thereby incurred the almost universal contempt of their associates and townsmen. But Mr. Smith lived to see himself in the majority, and to witness the consummation of his prayers and hopes in the eternal abolition of legal bonds from men of color. A writer in the *Lewiston Journal* of March 13, 1885, in a notice of Mr. Smith, says, in reference to this fact: "Those only who lived in those times can understand what such men were obliged to endure. But he bore it patiently until he saw the reward of his labor. He is the first of the three who has gone to his rest. The other two are nearly ninety years old."

Although always a farmer, it was not till the latter period of his life that Mr. Smith began to give special attention to orcharding. About 1860, or possibly a few years later, he began the nursery culture of fruit trees by planting seeds, budding, grafting and

general care. Grafting he had learned from observation when a young man, and had practiced it successfully for many years. He grafted near the collar of the tree for hardy varieties, those more tender being grafted in the top. At one time he had in cultivation, for purposes of testing, more than thirty sorts of apples, upwards of twenty of pears, about the same number of grapes, and quite a variety of small fruits. His culture of fruits led him to correspond with the leading fruit growers of the country, and this led to his writing for the agricultural press, which he did quite largely during the last dozen years of his life. He carried on a somewhat extensive correspondence with the late Mr. Charles Downing, and received from that gentleman, as a present, a copy of the large edition of his "Fruit and Fruit Trees of America." He wrote for the *Maine Farmer*, *Massachusetts Ploughman*, *The Home Farm*, the *New York Tribune* and other agricultural journals, to all of which his contributions were most gladly welcomed. His contributions were generally upon questions of practical experience in orchard management, and from his long and close observation, and his terse, vigorous manner of expressing his views, his articles were especially valuable. He based no statements on tradition; he hated superstition; he disliked all forms of sham or pretence. One of his articles, written against the raising of cider apples, and the making of apples into cider, was rejected by the agricultural paper to which it was sent; as was also another against horse racing at fairs; but it was not many years afterward that the same paper expressed, editorially, the same sentiments to which he had given utterance. His articles on the law of transmission in plants, on the circulation of sap, on the latent buds in fruit trees and their capability to be induced into bearing boughs, led him into public controseries, through the press, with writers who differed with him, but who were all constrained to acknowledge his ability, and that the facts which he had observed and stated were more potent than many pretty theories.

At the incorporation of this Society, in 1873, Mr Smith became a life member, and for many years was a constant attendant upon its meetings, and a large exhibitor at its fairs, in both of which he always manifested a lively interest. It is not too much to say that his example, his writings for the press, his public discussions at pomological meetings, and his exhibition of fruits at our fairs, have done a great deal to help on a knowledge of fruits, an understand-

ing of their principles of cultivation, and contributed directly to the growing of more No. 1 apples by our orchardists. To this end he was a public benefactor. He was held in high esteem by all his associates of this Society, and by his fellow townsmen and the citizens of his native county. He was an honest man. An obituary notice published in the *Zion's Advocate*, shortly after his death, concluded as follows :

“ Of a sensitive nature, with a delicate constitution, the constant strain that he put on his mind was too much for his nervous system, and in consequence, in his later years, his mind was less spiritual and clear, though he never faltered in his belief and trust in the Saviour.”

The writer of the article previously alluded to, published in the *Lewiston Journal*, says :

“ He was a close observer, a deep thinker, a patient investigator. He was both practical and scientific. Nothing in his favorite pursuit escaped his vigilance or analysis. He had a remarkable knowledge of the botany and chemistry of fruit growing, and in these branches he availed himself of the best helps and made the best use of them. It was a treat to go with him through his extensive grounds and see how admirably he had succeeded, and hear him talk on his chosen themes. In a just sense he was a philosopher. He gave a reason for all he did and believed. He received nothing as a fact until he was convinced by facts of its truth. He was a self-made man, an original investigator, a lover of truth, and a candid listener.”

Mr. Smith died at his home, in Monmouth, February 19, 1885, aged 77 years, 7 months.

SAMUEL L. BOARDMAN.

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TRANSACTIONS

OF THE

Maine State Pomological Society,

FOR THE YEAR

— 1885 —

Including the Proceedings of the Winter Meeting held at
Turner, February 17 and 18, 1886.



EDITED BY THE SECRETARY,
SAMUEL L. BOARDMAN.

AUGUSTA:
KENNEBEC JOURNAL BOOK PRINT.
1886.

—“I shall only instance in one delight more, the most natural and best natured of all others, a perpetual companion of the husbandman; and that is, the satisfaction of looking round about him, and seeing nothing but the affects and improvements of his own art and dilligence; to be always gathering of some fruits of it, and at the same time to behold others ripening, and others budding; to see all his fields and gardens covered with the beautious creatures of his own industry; and to see, like God, that all his works are good.”

—ABRAHAM COWLEY, 1618-1667.

INTRODUCTORY NOTE.

To the Secretary of the Maine Board of Agriculture :

The following pages embrace the transactions of the Maine State Pomological Society for the year 1885, including also, in accordance with previous custom, the proceedings of the annual Winter Meeting held on the 17th and 18th of February, 1886. An examination of the papers and essays presented at that meeting will show that they are from some of the best informed and most practical fruit growers in the State, and are upon interesting and timely topics. At the evening session on the first day the several essays read were contributed by ladies, the subjects being of a nature to specially interest them, and I believe the plan of giving an evening to flowers and their culture during our Winter meeting, to be one that should be carried out at future sessions. Small fruits justly occupied considerable time ; and the future outlook for the fruit growing interest of the State received consideration in two suggestive papers. I am happy to believe the present report contains many valuable essays, and will worthily occupy a place beside the previous interesting and important Reports of the Society.

SAMUEL L. BOARDMAN, *Secretary.*

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OFFICERS FOR 1885.

President.

CHARLES S. POPE, Manchester.

Vice Presidents.

S. R. SWEETSER, Cumberland Centre.

HENRY McLAUGHLIN, Bangor.

Secretary.

GEO. B. SAWYER, Wiscasset.

[Resigned.]

SAMUEL L. BOARDMAN, Augusta.

[Appointed May 29, 1885.]

Treasurer.

GEO. B. SAWYER, Wiscasset.

Executive Committee.

The President and Secretary, *ex-officio*; Andrew S. Sawyer, Cape Elizabeth; Leander H. Blossom, Turner; William P. Atherton, Hallowell.

Trustees.

Androscoggin County,	D. J. Briggs, South Turner.
Aroostook	" E. E. Parkhurst, Maysville.
Cumberland	" Otis C. Nelson, New Gloucester.
Franklin	" G. K. Staples, Temple.
Hancock	" Charles G. Atkins, Bucksport.
Kennebec	" Richard C. Plaisted, Gardiner.
Knox	" Elmas Hoffses, Warren.
Lincoln	" H. J. A. Simmons, Waldoboro'.
Oxford	" Jairus K. Hammond, Paris.
Penobscot	" J. E. Bennoch, Orono.
Piscataquis	" H. A. Robinson, Foxcroft.
Sagadahoc	" H. S. Cary, Topsham.
Somerset	" James S. Hoxie, North Fairfield.
Waldo	" D. B. Johnson, Freedom.
Washington	" Nelson S. Allen, Dennysville.
York	" Luther S. Moore, Limerick.

OFFICERS FOR 1886.

President.

CHARLES S. POPE, Manchester.

Vice Presidents.

S. R. SWEETSER, Cumberland Centre.

D. J. BRIGGS, South Turner.

Secretary.

SAMUEL L. BOARDMAN, Augusta.

Treasurer.

D. H. KNOWLTON, Farmington.

Executive Committee.

The President and Secretary, *ex-officio*; F. E. Nowell, Fairfield; L. H. Blossom, Turner Centre; W. P. Atherton, Hallowell.

Trustees.

Androscoggin County,	L. F. Abbott, Lewiston.
Aroostook	" E. E. Parkhurst, Maysville.
Cumberland	" Otis C. Nelson, New Gloucester.
Franklin	" G. K. Staples, Temple.
Hancock	" Charles G. Atkins, Bucksport.
Kennebec	" Richard C. Plaisted, Gardiner.
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Somerset	" James S. Hoxie, North Fairfield.
Waldo	" D. B. Johnson, Freedom.
Washington	" Nelson S. Allen, Dennysville.
York	" Luther S. Moore, Limerick.

COMMITTEES.

ON NEW FRUITS.

W. P. ATHERTON, HALLOWELL.
SAMUEL L. BOARDMAN, AUGUSTA.
MISS ALICE FOSTER, GARDINER.

ON NOMENCLATURE.

SAMUEL ROLFE, PORTLAND.
W. P. ATHERTON, HALLOWELL.
D. P. TRUE, LEEDS CENTRE.

EXTRACT FROM THE RECORDS.

Voted : "That a special committee on nomenclature be appointed by the President to serve at the annual exhibition, whose duty it shall be to name, as far as possible, the varieties exhibited for name, and to correct those wrongly named."

Pomological and Horticultural Societies.

Below is given a list of those Pomological and Horticultural societies and their secretaries, in the different States, with which our Society is in correspondence, and with which it exchanges reports and transactions. We should be very glad to extend the list so as to embrace all societies of this nature in every State in the Union.

American Pomological Society. Charles W. Garfield, Secretary, Grand Rapids, Michigan.

Department of Agriculture of the United States. Hon. Norman J. Colman, Commissioner, Washington, D. C.

American Horticultural Society. W. H. Ragan, Secretary, Greencastle, Indiana.

Massachusetts Horticultural Society. Robert Manning, Secretary, Boston, Mass.

Western New York Horticultural Society. P. C. Reynolds, Secretary, Rochester, N. Y.

New Jersey State Horticultural Society. E. Williams, Secretary, Montclair, N. J.

Pennsylvania Fruit Growers' Society. E. B. Engle, Secretary, Marietta, Penn'a.

Ohio State Horticultural Society. George W. Campbell, Secretary, Delaware, Ohio.

Wisconsin State Horticultural Society. William Trelease, Secretary, Madison, Wisconsin.

Indiana Horticultural Society. C. M. Hobbs, Secretary, Bridgeport, Indiana.

State Horticultural Society of Michigan. Charles W. Garfield, Secretary, Grand Rapids, Michigan.

Illinois State Horticultural Society. A. C. Hammond, Secretary, Warsaw, Illinois.

Iowa State Horticultural Society. Prof. J. L. Budd, Secretary, Ames, Iowa.

Missouri State Horticultural Society. L. A. Goodman, Secretary, Westport, Missouri.

Kansas State Horticultural Society. G. C. Brackett, Secretary, Lawrence, Kansas.

Nebraska Horticultural Society. D. H. Wheeler, Secretary, Plattsmouth, Nebraska.

State Board of Horticulture of California. A. H. Webb, Secretary, San Francisco, California.

Fruit Growers' Association of the Province of Ontario. D. W. Beadle, Secretary, St. Catharine's, Ontario.

Montreal Horticultural Society. H. S. Evans, Secretary, Montreal, P. Q., Canada.

Entomological Society of the Province of Ontario. Edmund Baynes Reed, Secretary, London, Ontario.

Maine State Pomological Society.

ANNUAL EXHIBITION.

The thirteenth annual exhibition of the Maine State Pomological Society was held at Lewiston, September 21, 22, 23, 24 and 25, 1885, in connection with that of the Maine State Agricultural Society, as in previous years. But while held on the same days, the details of the exhibition in every respect were under exclusive direction of the officers of the Pomological Society; and while the exhibition formed a part of the great whole, it was an important part and contributed largely to the general success. One-half of the third floor of the large exhibition hall on the State Park was devoted to the various displays of the Society, and the room proved entirely inadequate to properly arrange the large exhibits. Had the whole floor been placed at the disposal of the Society it would have been none too much for the wants of the exhibition. As it was, eighteen large tables were devoted to fruits, and eight racks to the various exhibits of cut flowers, while placed about the tables were vases and bouquets of various designs which helped to give a most attractive and artistic appearance to the tables. In consequence of the large number of plates and the small amount of table space, it was quite impossible to arrange the collection in so systematic a manner as has been done at some previous exhibitions, consequently the whole display lost somewhat in completeness, harmony, and the ease with which it could be studied. Indeed, after many of the tables had been arranged, it was necessary to remove the fruit from several of the tables, rearrange the same in order to obtain more room, provide additional accommodations, and this, too, while the exhibition was in progress. Six extra tables of large size were placed in the floor which was last year used as a public alley or court in the centre of the building, and

although this crowded the visitors into a narrower space than was agreeable, it was found necessary in order to make accommodations for the unexpectedly large display.

The excellent system of classification and arrangement of fruit adopted by the Society years ago was carried out in this late fair, so far as was possible with the limited space at command—county exhibits, single varieties, and other collective exhibits by themselves. First in the list of collections was that showing the best general State collection grown by the exhibitor. For this display the Society has been wisely reducing the number of varieties to be embraced in the collection, and this year adopted twenty as the standard of admission, hoping by this means to discourage the multiplication of varieties, and prevent the exhibition of collections running up to one hundred varieties, and above, such as have frequently been noticed at previous exhibitions, in which would be likely to be found scores of varieties of little value. In this class were fourteen entries.

In the class for county collections there was a magnificent display, eleven counties being represented, the competitors numbering thirty-seven. Most of these exhibits were exceptionally fine in quality and character. An interesting competitive exhibit was that for the Society's prizes for the best five varieties of autumn apples, and the best five varieties winter apples. In the former list were twenty-one and in the latter list twenty-two exhibitors. In the class for the prize offered for the "best collection of apples for home use for the entire year, in the smallest number of varieties," were twelve competitors; and in the collection of crab apples, nine competitors.

In the Society's list were premiums for the "best plate of from five to ten specimens each, according to their size," for fifty-four different varieties of our most celebrated fall and winter apples. In this class were eighty-eight different exhibitors, showing from one to thirty varieties each, and a most gorgeous sight it was when these plates had been arranged on tables by themselves for examination by the committee. More than a day was given to the work of examination, and so far as could be learned their judgment was unquestioned and met the approval of the different competitors. In a matter involving so much labor and so nice a degree of judgment, this is certainly a high compliment to the ability of the judges.

In the division embracing pears there was a truly magnificent display, and the value of the several collections was increased by the fact that the larger exhibits were correctly named—a matter of

great value and interest to those who wished to study them for the purpose of becoming *posted*. In the prize for the "best general exhibition" there were seventeen entries, the several exhibitors showing from five to thirty-four varieties. The Society's list embraces premiums for twenty-eight varieties, but those shown outnumbered the list by nearly one-half, forty-nine varieties being on the tables. Clapp's Favorite led with twenty plates, followed by Sheldon with nineteen, Flemish Beauty with seventeen, Bartlett with fifteen, Beurre d'Anjou and Louise Bonne De Jersey with twelve each, Howell with eleven, and the other sorts with from one to eight. Our Maine pears were represented as follows: Fulton, one plate; Nickerson and Goodale four each. The display of open-air, cold-grapery, and fire-heat grapes was large and fine.

There were twenty-four exhibitors of plums, and eight of cranberries. The display of canned and preserved fruits was the largest ever shown in the history of the Society.

In flowers and floral designs the exhibition was interesting, but not as large as at some previous fairs, there being no pot plants (Class VI, second division,) on display. Six entries were made for collections of cut flowers, of one hundred phials or more each. The show of single varieties was a choice one, but confined to a much less number of varieties than formerly. The floral designs were greatly admired for their unique character and exquisite arrangement of colors. The general rules of the exhibition, together with the premiums awarded in the several classes are given below; but it has been deemed unnecessary to publish the names of fruit or articles for which no entries were made, and to omit altogether the consecutive numbering of the several paragraphs as in the premium list:

GENERAL RULES OF THE EXHIBITION.

1. The general regulations of the Joint Exhibition will govern this department, as far as applicable thereto, and except as herein otherwise provided.

2. Entries may be made at the office of the Secretary, in Augusta, personally, or by letter, until September 17th, and after that at the Park, on the first day of the exhibition, until 4 o'clock P. M.

3. Exhibitors are requested to present full and accurate lists of the varieties of fruit or other articles to be entered; and to specify the premium for which each article is entered; also to affix their names and P. O. addresses, so that the same may be correctly trans-

ferred to the books and exhibition cards. Persons intending to make entries will confer a special favor by sending lists of the same to the Secretary at an early day.

4. All fruits and flowers offered for premiums must have been grown by the exhibitor; and any violation of this rule will debar or forfeit the premium. Specimens offered for *exhibition only*, by others than the growers, must in all cases have the name of the grower affixed, if known.

5. All fruits and flowers exhibited must, as far as possible, be correctly named according to the standard nomenclature adopted by the Society, and it be the duty of the standing committee of the Society to examine labels and correct all errors in nomenclature during the exhibition.

6. Where a certain number of specimens or varieties, or a definite quantity of any article, is required by the schedule, exhibitors should conform to such requirement; and larger quantities will not be admitted except by special arrangement with the Executive Committee, having reference to economy of space and the symmetry of the exhibition.

7. Dishes and labels for the exhibition of fruits, and phials and stands for cut flowers, will be furnished by the Society, and no others will be admissible. No premium will be paid on any article which is accompanied by an advertisement or business card.

8. Exhibitors must see to the delivery of their contributions, and will be required to put them *in the places designated for them*. After the articles are arranged they will be under the exclusive charge of the Society, and the owners will not have liberty to remove them until the exhibition is closed. All reasonable precautions will be taken for the safe keeping of articles on exhibition, after their arrival and arrangement upon the tables; but the Society will not be responsible for any loss or damage that may occur.

9. No premium will be awarded merely for want of competition, nor unless the article exhibited is worthy of it; and the committees are authorized to withhold the first and award the second or any subsequent premium, or none, at their discretion, according to merit. They are also to withhold all premiums from any articles not exhibited according to the rules, or where any unfair practice has been attempted by the exhibitor.

10. The committees are authorized to recommend gratuities for any new or rare fruits, flowers, plants, or articles of merit for which no premiums have been offered.

11. When a specimen is presented for identification, the exhibitor shall communicate all the information he possesses as to the origin and the local appellation.

12. No member of any of the committees for awarding premiums shall, in any case, vote or decide respecting an award for which such member may be a competitor, or therein have an interest; but in such case such member shall temporarily vacate his place upon the committee.

13. All premiums awarded will be payable by the Treasurer in sixty days after the close of the exhibition, *subject, however, to the following conditions and limitations, viz :*

1st—The Society guarantees to pay premiums and gratuities to the amount of \$500, but reserves the right, if more than that amount is awarded, to make such a *pro rata* reduction as will reduce the whole amount payable to that sum.

2d—All premiums not applied for before the first day of January next shall revert to the Society.

3d—The Society's premiums are open for competition to all persons residing in the State; but when premiums and gratuities exceeding \$1.00 and less than \$20.00 are awarded to a person not a member of the Society, the fee for membership will be deducted therefrom; and when premiums and gratuities amounting to \$20.00 or more are awarded to any person not a life member of the Society, the fee for life membership will be deducted therefrom; and in either case certificates of membership will be issued accordingly.

LIST OF PREMIUMS AWARDED.

Class I—APPLES.

FIRST DIVISION.

Special Regulations. Entries for all premiums in this division must consist of five specimens of each variety exhibited, and (except Nos. 18 and 19) of at least twenty correctly-named varieties. Entries for premiums Nos. 18 and 19 must be separate and distinct collections, not embracing any other collection or specimens, and in awarding the premiums regard will be had both to the quality of the specimens and the value of the varieties exhibited.

By "named varieties" is meant such as are named and described in some standard work on Pomology, or have been named and approved by some National or State Horticultural Society.

In adopting 20 as the number of varieties required in county collections, the Society does not intend to encourage the multiplication of varieties; and the committee will be instructed, in awarding the premiums, to have regard to *quality* and *value* rather than to the number of varieties, and will be authorized to recommend gratuities for meritorious collections embracing less than the number of varieties required as above.

Collections entered in this division for the county premiums were allowed to be entered for the general competition under premium No. 1; but it was provided that no more than one premium should be awarded to any collection.

For the best general exhibition of apples grown by the exhibitor in any part of the State. Miss L. L. Taylor, Lakeside, \$15.00; D. J. Briggs, South Turner, \$10.00; L. H. Blossom, Turner, \$5.00.

For the best general exhibition of apples grown by the exhibitor in Cumberland County. S. R. Sweetser, Cumberland Center, \$10.00;

Milton Dyer, Cape Elizabeth, \$8.00 ; T. M. Merrill, New Gloucester, \$5.00.

For the same in Franklin County. G. K. Staples, Temple, \$10.00.

For the same in Kennebec County. W. R. Wharff, Gardiner, \$10.00 ; Perley & Perkins, Seward's, \$8.00 ; E. A. Lapham, Pittston, \$5.00.

For the same in Knox County. Elmas Hoffses, Waldoboro', \$10.00.

For the same in Lincoln County. E. W. Dunbar, Damariscotta, \$10.00 ; H. J. A. Simmons, Waldoboro', \$8.00 ; Geo. B. Sawyer, Wiscasset, \$5.00.

For the same in Oxford County. C. H. George, Hebron, \$10.00 ; J. J. Towle, Dixfield, \$8.00.

For the same in Penobscot County. Henry W. Brown, Newburg, \$10.00 ; E. H. Kenniston, Simpson's Corner, \$8.00 ; L. I. Bickford, Dixmont Center, \$5.00.

For the same in Sagadahoc County. Fred Wright, Bath, \$10.00 ; H. S. Cary, Topsham, \$8.00.

For the same in Somerset County. J. S. Hoxie, Fairfield, \$10.00 ; Frank E. Nowell, North Fairfield, \$8.00 ; C. D. Holbrook, North Madison, \$5.00.

For the same in Waldo County. Mrs. A. B. Strattard, Monroe, \$5.00.

For the same in Androscoggin County. John Dunton, Lewiston, \$10.00 ; G. W. Blossom, Turner, \$8.00 ; N. W. Harris, Auburn, \$5.00.

Best five Autumn Apples. Hayden Bigelow, Greene, \$3.00 ; S. R. Sweetser, Cumberland Center, \$2.00 ; F. E. Nowell, Fairfield, \$1.00.

Best five Winter Apples. S. R. Sweetser, Cumberland Center, \$3.00 ; E. K. Whitney, Harrison, \$2 00 ; F. E. Nowell, Fairfield, \$1.00 ;

Best for Home Use. S. W. Shaw, Auburn, \$5.00 ; S. R. Sweetser, Cumberland Center, 2.00 ; H. J. A. Simmons, Waldoboro', \$3.00.

Best Crab Apples. J. S. Hoxie, Fairfield, \$1.00 ; C. D. Holbrook, North Madison, 50c.

SECOND DIVISION.

Entries for premiums in this division must consist of from five to ten specimens, according to size, of each variety exhibited, and must be separate specimens from any exhibited in the first division.

Bell's Early.	Henry T. Brown,	Newburg,	50c.
Black Oxford.	"	"	\$1.00.
Orange Sweet.	"	"	50c.
Red Astrachan.	"	"	50c.
Hyslop Crab.	John Ladd,	Anson,	50c.
Rhode Island Greening.	T. M. Lombard,	Auburn,	\$1.00.
Transcendent Crab.	"	"	50c.
President.	L. H. Blossom,	Turner,	50c.
Roxbury Russet.	D. W. Pulsifer,	Turner,	\$1.00.
Stark.	L. H. Blossom,	Turner,	\$1.00.
Tetofsky.	L. H. Blossom,	Turner,	50c.
Briggs' Auburn.	Miss L. L. Taylor,	Lakeside,	50c.
Fall Harvey.	"	"	50c.
Franklin Sweet.	"	"	\$1.00.
King of Tompkins.	"	"	\$1.00.
Moses Wood.	"	"	50c.
Mother.	"	"	50c.
Northern Spy.	"	"	50c.
Rhode Island Greening.	Miss L. L. Taylor,	Lakeside,	50c.
Somerset.	Miss L. L. Taylor,	Lakeside,	50c.
Williams' Favorite.	Miss L. L. Taylor,	Lakeside,	\$1.00.
Winthrop Greening.	"	"	50c.
Orange Sweet.	J. S. Hoxie,	Fairfield,	\$1.00.
Peck's Pleasant.	"	"	50c.
Tetofsky.	"	"	\$1.00.
Black Oxford.	C. A. Day,	Turner,	50c.
Yellow Bellflower.	E. H. Kenniston,	Simpson's Corner,	50c.
Moses Wood.	W. R. Wharff,	Gardiner,	\$1.00.
Red Canada.	Nelson Ham,	Lewiston,	50c.
Grimes' Golden.	E. A. Lapham,	Pittston,	\$1.00.
Talman's Sweet.	"	"	50c.
Wagener.	N. W. Harris,	Auburn,	50c.
Hyslop.	Horace C. Little,	Lewiston,	50c.
Benoni.	Henry S. Carey,	Topsham,	\$1.00.
Gravenstein.	A. B. Chipman,	West Gloucester,	50c.

Roxbury Russet.	A. B. Chipman,	West Gloucester,	50c.
Franklin Sweet.	Perley & Perkins,	Seward's,	50c.
Garden Royal.	"	"	\$1.00.
Hightop Sweet.	"	"	\$1.00.
Large Yellow Bough.	"	"	50c.
Starkey.	Perley & Perkins,	Seward's,	\$1.00.
Primate.	"	"	\$1.00.
Hubbardston Nonsuch.	David Farrar,	Lewiston,	50c.
Duchess of Oldenburgh.	I. T. Waterman,	East Auburn,	\$1.00.
Fameuse.	I. T. Waterman,	East Auburn,	\$1.00.
Gravenstein.	I. T. Waterman,	East Auburn,	\$1.00.
Baldwin.	"	"	50c.
Briggs' Auburn.	I. T. Waterman,	East Auburn,	\$1.00.
Benoni.	Frank E. Nowell,	Fairfield,	50c.
Hightop Sweet.	Frank E. Nowell,	Fairfield,	50c.
Porter.	Frank E. Nowell,	Fairfield,	\$1.00.
Wagener.	"	"	\$1.00.
Winthrop Greening.	Frank E. Nowell,	Fairfield,	\$1.00.
Nodhead.	O. B. Cheney,	Lewiston,	50c.
Baldwin.	S. P. Robie,	Auburn,	\$1.00.
Red Russet.	S. L. Farwell,	Cumberland Center,	\$1.00.
Hubbardston Nonsuch,	D. B. Wilson,	"	\$1.00.
Williams' Favorite.	G. D. Sweetser,	"	50c.
Duchess of Oldenburgh.	S. R. Sweetser,	Cumberland Center,	50c.
Nodhead.	S. R. Sweetser,	Cumberland Center,	\$1.00.
King of Tompkins.	S. R. Sweetser,	Cumberland Center,	50c.
Somerset.	S. R. Sweetser,	Cumberland Center,	\$1.00.
Mother.	"	"	\$1.00.
Early Harvest.	H. J. A. Simmons,	Waldoboro',	50c.
Starkey.	Geo. B. Sawyer,	Wiscasset,	50c.
Sweet Bough.	D. House,	North Turner,	\$1.00.
Northern Spy.	R. H. Gardiner,	Gardiner,	\$1.00.
Red Canada.	"	"	\$1.00.
Yellow Bellflower.	R. H. Gardiner,	Gardiner,	\$1.00.
President.	B. E. Allen,	North Greene,	\$1.00.
Rolfe.	B. E. Allen,	North Greene,	\$1.00.
Blue Pearmain.	C. H. George,	Hebron,	\$1.00.
Harvey Greening.	"	"	\$1.00.
Peck's Pleasant.	L. K. Litchfield,	Winthrop,	\$1 00.
Fameuse.	D. H. Knowlton,	Farmington,	50c.

Alexander.	H. A. B. Hyes,	Industry,	\$1 00.
Wealthy.	C. Moody,	North Farmington,	50c.
Deane.	P. Whittier,	Chesterville,	50c.
Blue Pearmain.	J. J. Towle,	Dixfield,	50c.
Garden Royal.	" "	"	50c.
Talman's Sweet.	" "	"	\$1.00.
Alexander.	M. C. Hobbs,	West Farmington,	50c.
Sops of Wine.	M. P. Tufts,	Farmington,	\$1.00.
King Sweeting.	" "	"	50c.
Deane.	" "	"	\$1.00.
Unknown (for Gratuity).	E. F. Purington,	Wilton.	
Red Astrachan.	M. S. Kelley,	Phillips,	\$1.00.
Early Harvest.	" "	"	\$1.00.
King Sweeting.	John S. Gay,	Farmington,	\$1 00.
Wealthy.	C. D. Holbrook,	North Madison,	\$1.00.
Porter.	D. W. Pulsifer,	East Poland,	50c.
Pumpkin Sweet.	H. G. Fairbanks,	Monmouth,	\$1.00.
Pumpkin Sweet.	Mrs. L. S. Killings,	Lewiston,	50c.

Class II—PEARS.

For best general exhibition of Pears. Samuel Rolfe, Portland, \$12.00; L. J. Perkins, Portland, \$8.00; J. L. Bickford, Dixmont, \$5.00; G. B. Sawyer, Wiscasset, \$3.00.

For best five named varieties of Autumn Pears. A. J. Hersom, \$3.00; Nelson Ham, Lewiston, \$2.00.

For best single variety of Autumn Pears. H. T. Leech, \$2 00; S. E. Leech, \$1.00.

For best single variety of Winter Pears. L. J. Perkins, \$2.00; D. P. True, \$1.00.

For the best dish of Bartlett. L. M. Berry, Winthrop, \$1.00; A. G. Thurlow, New Gloucester, 50c.

Belle Lucrative. J. S. Hoxie, Fairfield, \$1.00; E. K. Whitney, Harrison, 50c.

Buffum. C. J. Perley, Vassalboro', \$1.00; L. M. Berry, Winthrop, 50c.

Beurre d' Anjou. A. J. Hersom, Brunswick, \$1.00; E. L. Mitchell, Lewiston, 50c.

Beurre Bosc. A. S. Sawyer, Cape Elizabeth, \$1.00.

- Beurre Hardy. R. H. Gardiner, Gardiner, \$1.00.
 Beurre Superfin. D. P. True, \$1.00.
 Beurre Clairgeau. G. B. Sawyer, \$1.00; D. J. Briggs, 50c.
 Beurre Diel. D. J. Briggs, \$1.00; George Hunter, Strong, 50c.
 Clapp's Favorite. A. G. Cates, Auburn, \$1.00; L. J. Perkins, 50c.
 Doyenne Boussock. L. J. Perkins, \$1.00.
 Duchesse d'Angouleme. S. W. Cook, Lewiston, \$1.00; A. J. Hersom, 50c.
 Flemish Beauty. E. K. Whitney, \$1.00; H. T. Leech, 50c.
 Fulton. L. J. Perkins, \$1.00.
 Glout Morceau. L. K. Litchfield, Winthrop, \$1.00; S. E. Leech, 50c.
 Goodale. C. J. Perley, \$1.00; Miss L. L. Taylor, Lakeside, 50c.
 Howell. E. L. Mitchell, \$1.00; R. H. Gardiner 50c.
 Lawrence. C. H. George, Hebron, \$1.00; D. P. True, 50c.
 Louise Bonne de Jersey. D. P. True, \$1.00; E. L. Mitchell, 50c.
 Nickerson. Miss L. L. Taylor, \$1.00; S. W. Shaw, Auburn, 50c.
 Seckel. John Goss, Auburn, \$1.00; D. J. Briggs, 50c.
 Sheldon. S. W. Cook, \$1.00; John Dunton, New Gloucester, 50c.
 Swan's Orange. L. M. Berry, \$1.00.
 Vicar of Winkfield. S. W. Cook, \$1.00; D. P. True, 50c.
 Winter Nelis. R. H. Gardiner, \$1.00.

Class III—GRAPES.

- For best exhibition of grapes grown with artificial heat. J. C. Baker, Lewiston, 1st, \$8.00; John Vickery, Auburn, 2d, \$5.00.
 For best exhibition of grapes grown in cold grapery. Geo. B. Sawyer, Wiscasset, 1st, \$8.00.
 For best cluster Black Hamburg. Geo. B. Sawyer, 1st, \$1.00; John C. Baker, 2d, 50c.
 White Muscat. G. B. Sawyer, 1st, \$1.00; J. C. Baker, 2d, 50c.
 Muscat Hamburg. J. C. Baker, 1st, \$1.00.
 White Chasselas. G. B. Sawyer, 1st, \$1.00; J. C. Baker, 2d, 50c.
 Lady Downes. J. C. Baker, 1st, \$1.00.
 Buckland Sweet Water. J. C. Baker, 1st, \$1.00; Geo. B. Sawyer, 2d, 50c.

Red Chasselas. J. C. Baker, 1st, \$1.00; G. B. Sawyer, 2d, 50c.

For best exhibition of grapes grown in open air. J. S. Hoxie, North Fairfield, 1st, \$5.00; D. P. Truie, Leeds Center, 2d, \$3.00.

For best single variety grown in open air. Charles I. Perley, Seward's Mills, (Champion) 1st, \$2.00; J. S. Hoxie, North Fairfield (Delaware), 2d, \$1.00.

For 3 bunches Delaware. E. K. Whitney, Harrison, 1st, \$1.00; Silas M. Wing, Phillips, 2d, 50c.

Concord. E. K. Whitney, Harrison, 1st, \$1.00; W. R. Wharff, Gardiner, 2d, 50c.

Hartford Prolific. S. P. Robie, Auburn, 1st, \$1.00; E. K. Whitney, 2d, 50c.

Rebecca. E. K. Whitney, 1st, \$1.00.

Massasoit. J. S. Hoxie, 1st, \$1.00.

Salem. E. K. Whitney, 1st, \$1.00.

Worden. J. S. Hoxie, 1st, \$1.00.

Brighton. E. K. Whitney, 2d, 50c.

Moore's Early. J. S. Hoxie, 1st, \$1.00; E. K. Whitney, 2d, 50c.

Class IV—PLUMS.

For best general exhibition of plums, not less than ten varieties. John Dunton, Lewiston, 1st, \$8.00; Elijah Low, Bangor, 2d, \$5.00.

For best dish of plums of a single variety. Moses Crafts, Auburn, (Red Magnum Bonum) 1st, \$2.00; E. W. Dunbar, Damariscotta, (Niagara), 2d, \$1.00.

For best dish Green Gage. E. W. Dunbar, Damariscotta, 1st, \$1.00; Frank E. Nowell, Fairfield, 2d, 50c.

Purple Gage. Nelson Ham, Lewiston, 1st, \$1.00; J. S. Hoxie, North Fairfield, 2d, 50c.

Yellow Gage. Moses Crafts, Auburn, 1st, \$1.00; Frank E. Nowell, Fairfield, 2d, 50c.

Prince's Imperial Gage. E. W. Dunbar, Damariscotta, 1st, \$1.00; H. J. A. Simmons, Waldoboro', 2d, 50c.

General Hand. Frank E. Nowell, Fairfield, 1st, \$1.00.

Lawrence. J. S. Hoxie, North Fairfield, 1st, \$1.00.

Mooer's Arctic. J. S. Hoxie, North Fairfield, 1st, \$1.00.

McLaughlin. E. W. Dunbar, Damariscotta, 1st, \$1.00.

Bavay's Green Gage. George B. Sawyer, Wiscasset, 1st, \$1.00; Nelson Ham, Lewiston, 2d, 50c.

Lombard. G. B. Sawyer, Wiscasset, 1st, \$1.00; Moses Crafts, Auburn, 2d, 50c.

Magnum Bonum (Red). M. P. Hawkins, 1st, \$1.00; G. B. Sawyer, 2d, 50c.

Smith's Orleans. Nelson Ham, Lewiston, 1st; D. P. True, Leeds Center, 2d.

Class V—MISCELLANEOUS ARTICLES, CANNED FRUITS, PRESERVES, ETC.

Best peck of cultivated cranberries. Silas M. Wing, Temple, \$2.00; Dr. J. A. Morton, Bethel, \$1.00.

Best variety of canned fruits, preserves, pickels, etc., made and put up by the exhibitor. Mrs. D. H. Colby, Lewiston, \$3.00; Mrs. C. A. Miller, Lewiston, \$2.00.

Best specimen of canned peaches. Mrs. A. W. Penley, \$2.00; Mrs. M. Phauenf, \$1.00.

Best specimen of canned plums. Mrs. D. H. Colby, \$1.00; Mrs. C. A. Miller, 50c.

Best specimen of canned strawberries. Moses Crafts, Auburn, \$1.00; Mrs. F. Hoyt, Winthrop, 50c.

Best specimen of canned raspberries. Moses Crafts, \$1.00; Mrs. E. A. Lapham, Pittston, 50c.

Best specimen of canned cherries. Mrs. J. R. Hall, \$1.00; Mrs. C. A. Miller, 50c.

Best specimen of canned quinces. Miss A. M. Jordan, Auburn, \$1.00; Mrs. D. H. Colby, 50c.

Best specimen of canned tomatoes. S. E. Leavitt, Auburn, \$1.00; Miss A. M. Jordan, 50c.

Best specimen of preserved quinces. Mrs. F. Hoyt, \$1.00; Miss A. M. Jordan, 50c.

Best specimen of preserved apples. Mrs. M. Phauenf, \$1.00; Miss A. M. Jordan, 50c.

Best specimen of preserved plums. S. E. Leavitt, \$1.00; Mrs. D. H. Colby, 50c.

Best specimen of preserved pears. Mrs. D. H. Colby, \$1.00; Mrs. E. A. Lapham, 50c.

Best specimen of preserved strawberries. Mrs. M. Phauenf, \$1.00; A. B. Chipman, New Gloucester, 50c.

Best specimen of preserved raspberries. Miss Addie Lapham, Pittston, \$1.00; Mrs. D. P. True, Leeds, 50c.

Best specimen of preserved currants. Miss A. M. Jordan, \$1.00; A. B. Chipman, 50c.

Best specimen of preserved cherries. Mrs. C. A. Miller, \$1.00; Mrs. D. H. Colby 50c.

Best jar assorted pickles. Mrs. E. A. Lapham, \$1.00; Mrs. A. B. Strattard, Monroe, 50c.

Best specimen tomato catsup. Miss A. M. Jordan, \$1.00; Mrs. A. W. Penley, 50c.

Best jar quince jelly. Miss A. M. Jordan, \$1.00; Mrs. C. A. Miller, 50c.

Best jar apple jelly. Mrs. F. Hoyt, \$1.00; Miss C. M. Butts, Canaan, 50c.

Best jar grape jelly. Miss A. M. Jordan, \$1.00; Mrs. C. A. Miller, 50c.

Best jar currant jelly. Miss A. M. Jordan, \$1.00; Miss C. M. Butts, 50c.

Best jar strawberry jelly. Mrs. F. Hoyt, \$1.00; Mrs. D. H. Colby, 50c.

Best specimen of evaporated apple. J. J. Towle, South Carthage, \$1.00.

Class VI—FLOWERS.

In this class no article can be entered for more than one premium. All plants and flowers entered for premium must positively be in their places at the exhibition room on the second day of the fair, at 10 o'clock A. M.

For best display of cut flowers, filling not less than one hundred phials. Mrs. Chas. Stanley, Winthrop, \$10.00; Mrs. G. B. Sawyer, Wiscasset, \$8.00; Miss Cora E. Ring, Richmond, \$5.00; Mrs. A. B. Strattard, \$3.00.

For best exhibition of roses, not less than ten varieties. Perez S. Burr, Freeport, \$5.00.

Dahlias, ten varieties. Mrs. Chas. Stanley, \$2.00; Miss Abbie E. Ring, Richmond, \$1.00.

Chinese Pinks. Mrs. Chas. Stanley, 50c.

Japan Lilies. Mrs. A. B. Strattard, \$1.00.

Asters, ten varieties. Mrs. A. T. Clifford, Leeds Center, \$1.00; Mrs. Chas. Stanley, 50c.

Pansies. Mrs. Chas. Stanley, \$1.00 ; Mrs. A. B. Strattard, 50c.
The committee recommend a handsome gratuity to Mr. David B. Woodbury of Paris for a fine display of seedling pansies.

Zinnias. Mrs. Chas. Stanley, \$1.00.

Phlox Drummondii. Mrs. Chas. Stanley, \$1.00.

Balsams. Mrs. Chas. Stanley, 50c.

Petunias. Mrs. A. B. Strattard, \$1.00 ; Mrs. Chas. Stanley, 50c.

Gladiolus. Miss L. M. Pope, Manchester, \$2.00 ; Mrs. J. W. Thomas, Rockland, \$1.00.

Verbenas. Miss L. M. Pope, \$2.00 ; Mrs. Chas. Stanley, \$1.00.

SECOND DIVISION.

Best pair of parlor bouquets. Mrs. Chas. Stanley, \$1.00 ; Mrs. J. M. Thomas, 50c.

Wall bouquets. Mrs. Chas. Stanley, \$1.00 ; Mrs. A. B. Strattard, 50c.

Hand bouquets. Mrs. J. W. Thomas, \$1.00 ; Mrs. A. B. Strattard, 50c.

Floral pillow. Mrs. A. B. Strattard, \$2.00.

Floral design. Miss L. M. Pope, \$5.00 ; John Burr, Freeport, \$3.00 ; Mrs. Chas. Stanley, \$2.00.

Dinner table decoration. Mrs. J. W. Thomas, \$1.00.

Basket of wild flowers. Mrs. F. Hoyt, \$1.00 ; Mrs. D. H. Knowlton, Farmington, 50c.

Exhibition of dried grasses. Mrs. A. T. Gifford, \$2.00 ; Mrs. Chas. Stanley, \$1.00.

Everlasting flowers. Miss Cora E. Ring, \$1.00 ; Mrs. A. T. Clifford, 50c.

Dish of cut flowers. Mrs. A. B. Strattard, \$1.00.

Fancy basket of flowers. Miss Cora Stanley, Winthrop, \$2.00 ; Mrs. A. B. Strattard, \$1.00.

Single pot plant. Mrs. E. A. Lane, Anburn, 50c.

Proceedings of the Winter Meeting.

The annual Winter Meeting of the Society was held in the hall of the Turner Center Grange at Turner, on Wednesday and Thursday, February 17th and 18th, 1886. The forenoon was occupied by a business meeting of the Society. At this meeting the annual reports of the Secretary and Treasurer were presented, accepted and placed on file. The election of officers for the ensuing year also took place. The Treasurer's statement and the names of officers elected will be found in other parts of the report. There was a very creditable display of winter varieties of apples; and in the material presented for consideration, the numbers in attendance, and the spirit and interest of the meeting, it was one of the best the Society has ever held.

FIRST DAY. AFTERNOON.

The Society met at 1.30 o'clock P. M., Vice President D. J. Briggs in the chair. Dr. J. T. Cushing of Turner was then introduced, who delivered the following Address of Welcome:

ADDRESS OF WELCOME.

By DR. J. T. CUSHING.

Mr. President and Gentlemen of the Maine State Pomological Society:—We are come together to-day, first to welcome you to the hearts and homes of our town. You represent an organization we are proud to have come among us—a company of men to whom the State of Maine owes a debt of gratitude. If he is a benefactor to the whole human race “who causes two blades of grass to grow where only one grew before,” what can we say of a company of men through whose efforts our hill-sides have blossomed as the rose, and our storehouses and cellars have been filled to overflowing with the fruits of the earth.

We are proud to say this to you, brethren of the Maine State Pomological Society. We are proud to ascribe to you honor for the name and fame of our Maine apple industry whose line has gone out through all the earth, yea, even to the ends thereof. We are glad to say to you that your interests are ours—interests that the labors you perform in your meetings, and the thoughts you bring forward, bear their fruit all over this broad State, in better apples, more and more acceptable to the world at large, which has already learned that the apples of Maine are firmer, more highly flavored, and better keepers, than those grown in a milder climate on richer soil. We are told in our geographies and our children are taught in our schools, that the exports of Maine are hay, lumber and ice. It is time that apples were added to the list. Indeed during the past year I have taken pains to bring this fact to the minds of both teachers and pupils. In fruit culture, I believe that Maine is yet in her swaddling bands; our eyes have been closed and our ears have been stopped. We have not realized our capabilities nor our resources, but of these things I trust we shall hear later. We realize that it is to such men as you that we are indebted for the transformation of the stunted, inedible crab to such varieties as the blushing, luscious Baldwin, the golden Pippin and the delicate Bellflower.

We do not welcome you to-day to a town entirely new in the art and science of fruit culture; on the contrary we have not a few names among us whose successes and achievements in this line are well known to you. To them we commend you; for even as a diamond can only be polished by its own dust, so will your work be rendered more perfect by the co-operation of the men who are working in the orchards and gardens of every section of the State. So we welcome you to Turner, knowing that if we had no higher motive for our hospitality than a selfish one, we should be amply repaid by the good things you will bring us out of your storehouse of wisdom. We have not been left in doubt as to the origin of fruit. We find that the Creator gave to Adam, in the garden, trees good for food, trees yielding fruit, and that these were not put in as an afterthought of creation, but were placed upon the earth the third day. And if, as we believe, the troubles of man began with that fruit, we can console ourselves with the thought of this meeting, and of many other similar assemblies, where much good has been added to the aggregate of man's life from this same source.

In the days of the gods and heroes, a famous company was once gathered at a wedding feast upon Mt. Olympus. The goddess, Discord, had been slighted, when the invitations to the banquet went round, and to revenge herself upon the company, she threw among them a golden apple, inscribed "To the fairest." Jupiter, as the king of gods and men, was asked to award this prize; but as his own wife was among the claimants for the honor it bore, the prudent Jove shifted his burden of responsibility to the shoulders of Paris, a shepherd of Mt. Isla, who, after much deliberation and consideration of rival claims, awarded it to Venus the goddess of love and beauty. We shall have among us here, I trust, no apple of Discord, but there is a prize to be won. It may be won by many, and even by all. It is inscribed not "to the fairest," but to "faithful, earnest workers," and is given to all who put the energy and earnestness of their lives into the work which is around them.

This prize, a successful life and its results, is worth the winning, and will be awarded, now, as in the days of the shepherd judge, to those who have a spirit of love and beauty, a spirit of brotherly love and an appreciation of the beauty and grandeur and nobility of labor, which was not given to man as a curse but as a life-long blessing. We must enter upon and pursue the strife intelligently, with a due appreciation of its meaning. And to organizations like yours we owe the increase of fraternal feeling, and the added sense of the personal responsibility of the labor which is such a blessing to us in this age and generation. This interchange of thought and comparison of experiences add interest, even to drudgery, and we thank you for them. We are glad you have met with us. We welcome you to Turner!

The response to the above address was made, in behalf of the Society, by the Secretary, Mr. Samuel L. Boardman.

Following the above, President Pope was introduced, who proceeded to pronounce his annual address.

ANNUAL ADDRESS BY THE PRESIDENT,

CHARLES S. POPE.

Ladies and Gentlemen:—Once more it becomes my duty to address you on a subject in which we are all deeply interested. From the reports of the Secretary and Treasurer you have learned of the financial condition of the Society. While we are somewhat in debt, we have been able the past year to keep our expenses within our receipts, and we hope the time will soon come when our people will realize the growing importance of the fruit business in Maine and be ready to aid us in repaying our loans and in building up a live society.

Fruit growing in Maine is only in its infancy. We expect in a few years to see more apples shipped from Portland than from any other port in the country, and our markets and summer hotels furnished with small fruits from Maine gardens.

Where can the beginner get information better than by joining this Society and attending its meetings, where he may learn from the successes and failures of practical men.

If our fruit growers would mingle together more, there would be less money wasted in the purchase of varieties not adapted to this section, and in paying the tree peddler more per dozen for plants and trees than they would cost by the hundred at the nursery.

One is apt to become rusty by keeping too closely at home, and perhaps a little narrow and bigoted. We remember some years ago, seeing a man driving pine plugs in the holes where the apple tree borer left the tree, thinking to smother him, and we have seen several people lately who are satisfied that the disease called "sun scald" is caused by the flat-headed borer, and that apples must be allowed to "sweat" before they are in condition to pack away. Twenty years ago we thought we knew the whole story. We now realize how much there is to learn and the great advantage to be gained by contact with wide-awake men.

This is a suitable time to review the work of our fall exhibition and see where we can change and improve our methods, and any suggestions from interested parties would, no doubt, be gratefully received by the executive committee. The arrangement to hold our exhibition in connection with the State Agricultural Society seems

to give better satisfaction to the people at large, than a separate fair at a different date ; as few of our people can afford the time or expense to attend two exhibitions.

Our system of judging is not what we could wish, nor can we expect it to be until we can afford to engage experts from a distance who are not acquainted with the exhibitors, and will be free from all personal prejudice.

Very little has ever been done in correcting mistaken nomenclature at our fruit exhibits. The committee, when examining fruit, will pass without comment those specimens incorrectly marked, much to the dissatisfaction of the exhibitor, who cannot understand why his fruit was overlooked, and probably hard feelings are engendered and perhaps the judges charged with favoritism.

To prevent the loss of articles at the close of the exhibition, we think it necessary to enforce the rule that no one shall be allowed in the hall at that time, except those that have a pass with permission to remove goods.

There is one subject I have spoken of before, and I propose to bring it before you at every opportunity. It is to urge this Society to do all in its power to induce orchardists to be more careful in sorting their fruit.

I am aware that we have a better reputation now than a few years ago, but there is still room for great improvement. There is nothing gained by putting half a bushel of No. 2 apples in a barrel with No. 1. For example, a barrel of apples as ordinarily packed will sell for \$1.75, from this take half a bushel of the poorer ones and refill with strictly No. 1 apples ; the buyer will readily pay \$2.00 for such fruit, the poorer ones will sell for half price and in this way the farmer gets more money, the buyer is better satisfied, and, what is of more importance, we shall add greatly to our reputation and our self respect.

How many fruit growers have taken the pains to ascertain how much it would cost to throw out one-fourth of the poorer apples and thus make up an extra lot. Let us look at the figures, with apples at \$1.75 a barrel, four barrels would bring \$7.00. Sorting out one barrel of the smaller and imperfect apples, worth at least one dollar, the balance would cost \$2.00. Only 25 cents more on a barrel, but worth for exporting at least fifty cents more.

With an unusually large crop of apples for an off year, we have been receiving a fair price for late-keeping varieties suitable for

shipping, while ordinary fall apples were hardly worth gathering. I hope we shall not be slow to see that if we would compete successfully with other fruit sections, we must take advantage of the better keeping qualities of our apples and plant those varieties largely that will keep until the more perishable fruit is disposed of. After another year's experience we are more than ever convinced that it is for our interest to take more pains in keeping our apples for late shipment. We think it would be a paying investment for some party to put up a building for cold storage in Portland, where those who have not facilities at home could send their apples in the fall, to be kept until wanted for shipment. There would be the advantage of lower freight, no danger from freezing in transportation, and the apples could be kept in better condition than in a house cellar, where it is almost impossible to keep a cool, even temperature.

With the increase of our orchard products the time will soon come when we shall not be able to obtain second-hand barrels in which to pack our apples, nor do we consider this a cause for regret. As soon as there is an established demand some parties will be ready to manufacture good barrels at a fair price. The gain will more than compensate for the extra cost. First in the improved appearance of the apples when the barrels are opened, for a small quantity of flour will remain between the staves of the old barrels even when carefully cleaned, which will be dusted over the apples when moved to mould and thus injure the appearance and sale of the fruit. The gain in having the heads all made to fit will be appreciated by those who have ever had experience in trying to head old barrels, when the top hoops were gone and a head to be made from odd pieces. Now is the time for us to see what measures should be taken to establish a uniform size for the apple barrel and avoid the trouble which some of the fruit growers have had in other States. There should be a uniform size throughout the United States and then there could be no trouble between buyer and seller on that point.

Our best orchardists have become convinced that a seedling tree is the best, all things considered, from which to start an orchard. For a few years past the call for good seedling apple trees has been larger than the visible supply. Thousands of trees would be set the coming spring could they be obtained. Here is a chance for some man to engage in a paying business. But a man without experience would be likely to lose money in the attempt.

While encouraging the planting of more fruit trees let us be careful to warn all, that the enthusiasm must reach farther than the mere planting. We cannot expect to raise choice fruit without constant care. The increasing depredations of insects must be met with increased vigilance. We have enough poor fruit; what we want is a superior article, that will sell for remunerative prices, even in season of plenty. Last fall when apples were hardly worth picking in some orchards in New England, we knew of Maine-grown apples being sold in Boston for five dollars a barrel. To get the highest price we must raise the best varieties, and pack only choice specimens, well pressed down in clean barrels.

A slack, lazy, shiftless man will never make much money by orcharding. With the enemies we now have to contend, a man cannot lounge in the shade and make a fortune raising fruit. He must keep up a constant warfare and keep himself well posted on the best methods of cultivating and enriching his land and fighting the enemies.

Although the apple is our most important fruit, we must not ignore the smaller fruits and we propose at this meeting to give a little time to the consideration of the best varieties and methods of cultivation of some of these. So short a time is necessary after planting strawberries, raspberries and blackberries before we have a full crop, that many of our farmers now see the advantage of at least supplying their own tables with the small fruits.

It is wonderful how the contagion spreads in a neighborhood when some one begins the raising of these fruits and demonstrates how much easier it is to raise their own berries than it is to range the woods and fields for an inferior article. I have no doubt the time is near at hand when acres of small fruits will be planted for market, as we have the same advantage in these as in apples; they come to market after the southern-grown fruit is gone and prices have advanced.

One of the most important subjects to be considered at this time is that of obtaining horticultural statistics for the benefit of the grower. He should be informed of the probable yield of the different kinds of fruit and the consequent probable demands for the same, and thus be prepared to sell at a fair price. The fruit dealers keep themselves pretty well informed on the condition of the crop of the country and are frequently able to take advantage of those who are not posted. There is a chance for loss in two ways: one in selling too low, and

another, when there is a small crop in this section we are liable to think the price must be high, and perhaps hold too long. While a system of reports for this State, only, may be of great value, it is small when compared with what we need. Our Commissioner of Agriculture should organize a system for the whole country. From his address before the American Pomological Society, we find he realizes the importance of having reliable reports in this department. Can we not at this time take some action to aid in forwarding the work? I would suggest the appointing of a committee to confer with other horticultural societies, and with the United States Commissioner on the subject.

The planting of shade trees along the highways and about our school-houses, and the ornamentation of our homes, might receive a new impetus if we would take it up in connection with the other work of the Society.

There is too much truth, even now, in Whittier's picture of country life.

"The eye and ear
And heart are starved amidst the plentitude
Of nature, and how hard and colorless
Is life without an atmosphere. I look
Across the lapse of half a century
And call to mind old homesteads, where no flower
Told that the spring had come, but evil weeds,
Nightshade and rough leaved burdock, in the place
Of the sweet doorway greeting of the rose
And honey-suckle; where the house-wall seemed
Blistering in the sun, without a tree or vine
To cast the tremulous shadow of its leaves
Across the curtainless window."

Much lament has been made in our newspapers and out, because our sons and daughters leave the farm for more congenial employment the moment they are at liberty to do so. We admit the fact, but believe that in making the home attractive we have an easy and effectual remedy. We need not undertake great things in the shape of elaborate driveways, expensive gravelled walks and costly foreign trees and shrubs. A clean, well-kept lawn is within the reach of any Maine farmer, and, at very little expense and trouble, our forests will supply him with shade and ornamental trees, and the woodbine is at hand to festoon his buildings or fences. To these may be added from the nurseries such trees, shrubs or plants as taste may dictate or means permit.

In these days of cheap seeds, a flower garden for the girls of the family is not an expensive luxury, and well repays all trouble in the robust health produced by the out-door life, not to mention the refining influence on all parties. We can readily understand that young people who have helped thus to beautify their homes will be so closely attached to them as to require a strong inducement to begin an untried and uncertain life in a city.

We call to mind a charmingly shaded village where the enthusiasm of two or three men finally roused nearly all the others, and they planted shade trees on both sides of every street in the village. We see no reason why the farmers of a neighborhood should not thus join together, taking their boys with them, and give their time, for one or more gala days, to planting trees by the roadside and on the school-house grounds, thus adding to the attractiveness of the country and the comfort of travellers.

In closing we would say, we have never felt more encouraged in regard to the future of our Society. We are confident that fruit growing in Maine will increase until it shall become one of our leading industries, and while those who are laboring to promote this end may not receive much pecuniary benefit, they have the satisfaction of knowing that they have assisted others as well as themselves, which will be for them a sufficient reward.

At the conclusion of the President's Address, D. H. Knowlton, A. S. Ricker and C. A. Libby, were appointed a committee to take into consideration the suggestions and recommendations of the same, and to report at a subsequent hour. The programme was then continued with the paper of Mr. Pike, read in his absence by Mr. W. P. Atherton.

WHERE, AND OF WHOM SHALL WE PROCURE NURSERY STOCK?

By N. R. PIKE.

The increasing demand for all kinds of nursery stock makes these questions of importance to every man who contemplates starting an orchard, a vineyard, a strawberry, raspberry, or blackberry patch. And, though there may be some diversity of opinion in relation to the correct answer, I beg leave to state my own views on these points.

I think I stated in a former paper read before this Society, that from my own experience and observation, I was confident it did not

so much matter where nursery stock was grown, as *how* it was grown. And I still hold to that opinion. Yet, for the following reasons, my preferences are for Maine-grown stock. Not neglected fence-corner scrub stock, neither that which has been forced to form a soft, coarse-celled, spongy growth, like much of the stock brought among us from other States. All such stock, wherever grown, is worse than worthless for the State of Maine. Each year's growth should be well ripened and firm at the end of each growing season.

I speak from actual experience when I say that Maine-grown stock can be produced of far better quality than the *average* stock sold by smooth-tongued canvassers from other States and at half the price often paid for such stock. A vender of this sort said to me recently that it cost as much to dispose of his goods as it did to grow them. This statement needs no comment. Furthermore, it is a fact, though perhaps not generally known, that many of the canvassers for the sale of nursery goods are employed by men who never owned an interest in a nursery in their lives, but who, on getting in their orders, go to some New York nurseryman, and, at a small cost, procure such stock as no reliable nurseryman cares to send out in his own name, with which to fill these orders. And, in my opinion, this is one of the reasons why so much prejudice exists against New York stock. Another reason why we should prefer Maine-grown stock, though often urged upon our notice, will bear repeating, viz: The saving of a large amount of money at home that now goes out of the State. And yet another reason of still more importance is, that stock procured near home may be had fresh from the ground and in good condition, while that *pressed* into large boxes and shipped from a distance is always more or less damaged, and often rendered worthless from causes occasioned by long delays while in transit.

There are locations in every county in the State where all kinds of nursery stock adapted to our climate may be successfully grown. In fact, probably there is not a farm in Maine where such stock could not, to some extent, be grown with success and profit.

I think Mr. Atherton stated at the last winter meeting that the principal reason why nursery business did not meet with a more decided success in this State, was a lack of practical knowledge. This, to a considerable extent, is probably true, and is suggestive of a grand opening to the right man in the right place. And it occurs to me that a few young men of the right stamp could not do a wiser thing than to serve an apprenticeship of at least one year in

learning the details of the business, then return to Maine and make this their chosen and permanent profession. I believe almost unbounded success and the supply of an urgent demand awaits such an enterprise. And I am inclined to the opinion that this Society can no way more successfully advance the interests of the cause they represent than to make such effort as will result in this end.

But what I more particularly wish to impress upon the minds of those in want of any kind of nursery stock, is to give all canvassers a short answer and wide berth. And if the goods required can not be obtained at home, to give their orders direct to some reliable nurseryman in some other State. By so doing, stock true to name, of good quality when shipped, and at less cost, including cost of transportation, may be obtained. And in no case trust to the wily tramp who perambulates every town in the State, seeking whom he may beguile with his smooth words and pretty pictures. And here, I beg leave to make a statement of a case in point showing the advantages of ordering direct from the producer.

A certain party in the good old town of Winthrop, being desirous of entering into the cultivation of a good assortment of the small fruits for family use, interviewed several of the tramps alluded to, and found their prices invariably as much for twelve plants as the cost of one hundred ordered direct from the nurseryman and delivered in Winthrop. These facts, alone, not only make plain the situation, but commend themselves to the consideration of every one who contemplates growing fruit. And now while my pen is inked, I beg leave to call attention to the importance of small fruit culture. I wish to say to every man who has a family and owns a half acre of land, that there is no use to which he can devote a few square rods that will give so much satisfaction as the cultivation of a good assortment of the small fruits.

With comparatively a small outlay, and by devoting a little spare time to the pleasant occupation of cultivating the plants, and with the present facilities for keeping for future use whatever is desirable, every family may enjoy the pleasure of having some one of the small fruits on the table every day in the year. Every one has a penchant for these fruits, and, to gratify this taste, will range the field, the cutdowns, hills and valleys for them in their wild state, while by devoting far less time to the cultivation of the improved varieties than is required to gather the meager supply, an abundance of these fruits of far superior quality may be obtained. I am glad to know that

the cultivation of the small fruits is on the increase in Maine, and if by calling attention to the subjects I have introduced shall induce even a few to give these matters their careful consideration, my object in presenting them will so far be accomplished.

Following the paper by Mr. Pike, the paper contributed by Mr. Bennoch, was, in his absence, then read by the Secretary.

HOW AND WHERE SHALL WE PROCURE OUR NURSERY STOCK?

By JOHN E. BENNOCH.

As a member of the Maine State Pomological Society, I wish to discuss some points covered by my experience of more than thirty years among both apple and pear trees. I notice one of the most important subjects on your programme for the winter meeting is on procuring nursery stock. This is to be treated by N. R. Pike, who, I have no doubt, will handle it with ability and present points that will be of general interest and importance to all fruit growers.

My theory is that we should grow our trees at home; raise them as near as possible to where they are to be transplanted for orchard purposes. In doing this trees can be removed from the soil with less mutilation of the roots, can be set sooner and with less exposure of roots, than can possibly be done with trees taken from commercial nurseries a long distance away from us, which are quickly and unnaturally grown, causing in nearly all cases a tender growth. The growth of an apple or pear tree does not want to be driven beyond its natural process for the first two or three years of its life from seed. Neither does it from a graft. Any growth stimulated by strong dressing beyond its natural growth in a good soil, is unhealthy, is injurious to the trees, and produces disease, such as black heart, dropping of sap, tender growth, easily winter killed and unable to ripen up its wood for its own winter's sleep. All these diseases can be traced back to the forcing processes of growth of trees in the nursery.

In my visit to Sherman, Aroostook County, last fall, I was more fully convinced than ever that if the laws of nature are closely observed in the growing of products of the vegetable kingdom, the better would be the results. In many cases let the seeds take their own course and many lessons can be learned, by watching and studying the growth, and results, and products of the plant creation.

I refer to a number of specimens and varieties (unnamed) of natural seedlings, some of which I should judge at the time of eating would be very fine. These seedlings, as described to me, were the product of natural seed, and to my mind convinced me of the theory I have long held. F. K. Phoenix of Bloomingdale, Ill., is, I think, one of the strong advocates of this theory and plan. I believe in taking seed from large, good-grown, natural fruit, both apple and pear, to obtain hardy, strong fruit trees, and when a chance seedling shows itself it is generally a good one. It takes strong varieties to produce strong varieties, and this, I believe, is the only way to create strong sorts both as relates to hardihood and quality. Nearly all of our older noted varieties of fruit are chance seedlings, and grew natural and produced natural results. We have an account of about all of the hybrids and fancy fertilized varieties (Wealthy included) and not one of them ranks with our older varieties such as Baldwin, Northern Spy, Hubbardston and many others we all could mention; and these we can well affirm received no other attention than what they received from the natural gifts of the storehouse of mother earth. This is a lesson that will admit of greater study than it generally receives.

Trees coming from the hot-bed nurseries of New York and elsewhere as generally grown are not the trees for Maine men and orchardists to set out. I have heard men say in years past that they have orchards that are fine, and I also have seen them growing, but to-day many of them are showing signs of disease and decay. "Owing to what?" some will ask. I answer, owing to high feeding at the start, and being too quickly grown. This tells the whole story, and still farmers persist in buying and setting out these trees to meet with disappointment and failure. If I were to set a New York tree, crown grafted, I would not set any variety other than Northern Spy and Talman's Sweet to secure hardiness. The Spys I would re-graft on setting with bearing scions of the same variety. I do not claim that at this day a Northern Spy is a tardy bearer, but I think a man would be likely to die two deaths before a New York or a commercial-grown Northern Spy would bear, owing to being grafted with side shoots. The advantages are: grow stock from natural seed of good and large fruit at home for home orchards, graft well up with good bearing scions. The disadvantages are: plant trees sent hundreds of miles with roots mutilated and exposed, of tender and unknown

varieties, that on producing (if ever) doom you to disappointment after years of toil and favorable expectation.

I think and believe that on the cold line of apple growing the short-jointed, stubbed growth endures the cold better than the long-jointed, spreading varieties. I also think that in producing seedlings, those to plant from good natural seed raised in their vicinity would be the best way to promote hardihood; that they would be more likely to meet with success than in any other way. The best way to procure pear seedlings is from the native pear seed, then graft with Flemish Beauty, then double work up with other varieties as may suit you. I mean in Maine and other like climates.

In referring again to the short-jointed growth on the cold line I will explain now what I then omitted to do. The short growth spoken of ripens up quicker than the opposite, and that is one of the main points as to wintering free from winter killing. All woods that ripen late are more likely to have a hard winter of it, especially in the North.

With me the insect problem is one that still needs study. The borer I consider is the worst of all pests that infest the apple orchard and I know of but one sure way to stop it, which is to prevent the beetle from depositing the egg. This can be done by wrapping the trunk with cedar or any other kind of bark and inserting the bottom of the bark into the ground half an inch or more. This pest is, I think, on the increase, and great care should be taken to prevent its ravages. Borers have infested orchards the past season where they have never been seen before. Hundreds of apple trees are dying from the effects of the borer. It will pay well to fence orchards of one acre or even more for a poultry run. With me the past season the codlin moth has not troubled my trees. Sheep and hogs kill a great many if allowed to pick up windfalls, which they should. The apple maggot bids fair to cause great trouble. I have had none as yet, but I know of orchards within four miles that have been nearly destroyed by them—in fact, some varieties entirely so, the Fameuse and Gravenstein so much so that the apples were not harvested. I do not know what can or will be done, but something should be done by our Legislature in this direction, for I believe that they are destined to ruin our crops of apples. Wherever they go they destroy, and all fruit touched by them is utterly worthless. I hope at this meeting you will discuss this dreaded pest and try and provide for its future study and destruction.

DISCUSSION.

Mr. W. P. ATHERTON. I think that we ought to raise our own trees. I believe that Maine is capable of raising all the trees she wants. What we want is young men who have a practical knowledge of the business to take it in charge. There is a great difference between western-grown trees and Maine trees and I should class the former as soft and do not think it best to buy them. Last year, near the spring, I wanted twenty-five Baldwin trees and I went up to Mr. Chase who couldn't let me have them, so I sent to New York and got them. When they came I undid the bundle and found the roots bruised. The trees were set out and were taken up again in the fall and the bark was found to be soft. They were of good height but had started to bud and the roots were all mangled and cut up. They had been planted and re-planted and re-planted and I knew it. I set them out again and pruned the roots, tops and suckers. I should not be disappointed if they all died, as many of them are already dead. I have always had good luck in securing hardy stock from western dealers previous to this, and have trees now in my orchard that are ready to break down in the fall they hang so full of Rhode Island Greenings and Baldwins. From one-half acre of New York trees I have packed one hundred and twelve barrels of apples. The trees were set seventeen years ago in rows twenty-four by twenty-four feet apart. These trees are in a favorable location and receive a good deal of wash and the soil is adapted to the variety. We do wrong if we speak of everything out of the State as a humbug. I do not want to class all as frauds. Many tree venders have no practical knowledge of the business. We must look out for those who are not honest.

Hon. RUFUS PRINCE. I am afraid you hear me too often, but in order to have no time run to waste I will say a few words. I do not want my trees driven too hard. I want my trees fed *well* for I believe they are hardier and will make better orchard trees than where they are forced. Forcing them makes them black hearted. I can't see that Maine trees are any better than New York trees. I have taken up trees after they have been allowed to grow and have found no more black hearted ones among New York trees than among Maine trees. High feeding in a nursery makes a good looking tree but is then black hearted. If a tree is poor it shows itself soon. I

do not know why New York trees are any more tender than ours. They raise the same kinds that we do and if we order tender varieties in New York we get them. Are short-jointed trees most hardy? When I see a short-jointed tree I see one with a small apple and I should graft it as I consider it folly to raise a tree of that kind. I think a man may safely make that a rule.

MR. O. C. NELSON. What is a long-jointed tree?

MR. PRINCE. In all natural fruit you find spurs near together. I think that when these are near together the tree is short jointed. In speaking of borers, I visited an orchard in Jay, owned by R. P. Thompson, in which the trees were done up with tarred paper. We looked at them and we did not find a borer.

MR. L. F. ABBOTT. Is there no danger from using the paper?

MR. PRINCE. None to the bark, and still we found as many there as we did on those without the paper.

MR. NELSON. How is the paper fastened on?

MR. PRINCE. With twine.

MR. NELSON. I will say just one word about New York trees. I have had some experience in disposing of them. The only difficulty is with the purchaser. The nurserymen will agree to furnish as many varieties as the buyer wants and if he can't supply what is ordered he puts in some other kind to fill the order. New York trees are the best in our section of the country. Did that gentleman in Jay take pains to look above the tarred paper?

MR. PRINCE. Mr. Thompson spent an hour in the orchard. The paper was set down into the ground and we found no borers at all. I have found them as far as I am concerned.

MR. NELSON. Isn't it possible that the gentleman meant by a short-jointed tree one branching near the ground?

MR. PRINCE. Perhaps so.

PRESIDENT POPE. As I understand it the buds in short-jointed trees are very near together on the twigs. In long-jointed trees, as the King of Tompkins, they are far apart.

MR. ATHERTON. Would the Rhode Island Greening be a long-jointed tree?

DR. J. T. CUSHING. If a tree is a rapid grower it will be long jointed.

MR. NELSON. Would that hold good in all cases? The King of Tompkins is the longest jointed in buds and it is also one of the hardest.

Mr. H. L. LELAND. I reside on the cold line, and I think those varieties where the buds are close together are hardier than where they are wide apart. In our county the King of Tompkins is not a hardy variety.

Mr. NELSON. If the Baldwin is among our short-jointed trees why is it a tender variety?

Mr. D. J. BRIGGS. I wish Mr. Bennoch had given us a little more light on the apple maggot question. It is a very essential point. In order to have fruit bring high prices it must be free from worms. I put tarred paper around fifty pear and ninety Baldwin trees and in one year I had lost ten of them.

President POPE. What was the cause?

Mr. BRIGGS. I think it killed the bark as in removing the paper the bark all came off.

Dr. CUSHING. Did you bind the paper tight?

Mr. BRIGGS. No, sir. I bound it quite loosely. I don't believe we should use it at all.

President POPE. Were those trees any more exposed to the sun than others in the orchard?

Mr. BRIGGS. Not any more than others. I set out two or three hundred trees at the same time.

Mr. W. H. KEITH. I would like to bring up the subject of the sorting of apples. Mr. Ricker, what do you consider a No. 1 apple?

Mr. A. RICKER. One with no worm holes in the apple, and no appearance of any.

Mr. KEITH. How small size?

Mr. RICKER. I can't tell, but if they are sound and not too small I put them in.

Mr. KEITH. How many put their apples in bins?

Mr. RICKER. Quite a number in our section; most of them without sorting. This is quite an essential point in regard to reputation. We do not practice it, but always sort them before we bin them.

Mr. BRIGGS. Do you pick off from the tree?

Mr. RICKER. Yes, and then sort on the ground. Of course there will be some shrinkage. Baldwins shrink about one barrel in fifty, and out of thirty-five barrels of Bellflowers I only lost about four quarts. Both were binned in the same cellar. Perhaps my case in sorting is different from some others. I evaporate all No. 2 apples and have bought No. 2 apples of my neighbors to evaporate. I put none but No. 1 apples in the cellar. I sort apples in the fall and if

particular, by so doing I get a better run. I have seen apple buyers put in as N. 1's, apples which I would not put in. We should club together to ship. Mr. President, I would like to ask if apple barrels were scarce last fall?

PRESIDENT POPE. They were. Some were unable to get them.

MR. KEITH. I think it lots of extra work to prepare second-hand barrels. It looks to me to be very expensive and laborious work to wash out every barrel before it can be used. These new barrels are better for us. I know some will take old ones because they are cheaper. I have had good flour barrels offered to me for fifteen cents, but I would take new ones at twenty-five cents instead.

MR. PRINCE. Are they planed?

MR. KEITH. No, not wholly.

MR. PRINCE. Are they straight or bilge?

MR. KEITH. Bilge.

MR. S. L. BOARDMAN. What is the kind of wood of which they are made?

MR. KEITH. Generally birch, but also of other kinds. I think they should be used.

MR. RICKER. Are they all of the same size?

MR. KEITH. They are the same size as a flour barrel.

MR. J. K. HAMMOND. Many in our section have had the privilege of procuring new barrels at from twenty to twenty-five cents each. We get them, and although there are a number of thousand made there are not enough to supply all who want them. I would pay thirty-five cents for them. They are of good stock, planed, heads planed, and flat hoops. I consider those with flat hoops the best. They are a little smaller than a flour barrel and save about one barrel in fourteen. We have had a sad experience in packing apples. The men who came to buy apples would buy almost anything and got us in a bad way of packing. For the past few years we have shipped our apples across the water. There are but very few in my section of the country who bin their apples. They sell them all in the fall of the year.

MR. KEITH. Why were these barrels smaller than flour barrels?

MR. HAMMOND. The heads were the same size but there was not so much bilge to them.

MR. NELSON. I have had some experience with these new barrels.

MR. KEITH. How much did they hold?

MR. NELSON. They fell short from two to four quarts.

HON. Z. A. GILBERT. In regard to the size of the apple barrel I think we should be cautious. They had a law in New York fixing the dimensions of apple barrels and they are smaller than flour barrels. This resulted in the refusal of buyers to purchase apples packed in small barrels and their manufacture was stopped and all fruit is now packed in barrels the size of flour barrels. We shall have to provide barrels soon, as the apple crop will increase, and these barrels should be of uniform size. Much care should be exercised in packing, for, as the trade is now managed, the principal part of the apple crop is sent abroad. If a grower puts up good fruit he will get no benefit by selling them to dealers here. Ship them yourself and in time you will reap the benefit.

PRESIDENT POPE. I will read an extract from a letter from Mr. Chas. W. Garfield, Secretary of the American Pomological Society: "We use barrels of two sizes, one holding two and three-fourths bushels, and the other three bushels. Dealers now pay twenty-five cents." Michigan apples are universally packed in new barrels.

MR. BRIGGS. It is well known that there are two sizes of barrels, as cheap flour is put into smaller barrels and pressed harder than the best flour. I am aware that it will be necessary to purchase new barrels for the reason that those who purchase our apples will be better satisfied. I wash my barrels well, but you can't get all the dirt out. We must be careful in packing apples. Some purchasers pack the apples themselves and put in many which I should be ashamed of as No. 1 apples and would reject. Where apples are packed carelessly they are almost sure to open badly. One Canada dealer has put all kinds of apples in as No. 1 and this will ruin the market.

This closed the afternoon's discussion.

EVENING SESSION.

President Pope called the meeting to order at 7.30 o'clock, the hall being filled. The first essay presented was,

WEED YOUR OWN GARDEN.

By ZILPHIA S. PRINCE.

In a place where land is as plenty and cheap as it is in Maine, surely each one, man, woman and child can have, at least, a spot large enough for a garden. Of course, to have a really fine garden,

it is necessary to have good soil, rich, fine and mellow. If we can't have just such as we would, however, we should make the best of such as we can get. Even poor soil can be worked over, pulverized and enriched till the waste places may be made to blossom like the rose.

Thorough preparation of the soil in spring is necessary. It must be spaded deep and well worked over or many of the best elements will be of little or no use to the growing plants.

Another essential is plenty of room. Don't try to crowd all kinds into a quarter of an acre of ground. Have the size and quality of your plot in mind when deciding what and how many kinds you will try to raise. Good seed is, if possible, more important than good soil. If we hope for the best of plants and fruits we should be sure that all seed used is from the best varieties of thrifty plants, ripe, fresh and pure. The best that can be obtained is none too good and is cheapest at whatever cost.

Don't hurry. To be sure some plants should be started early, especially if we want green peas for dinner on the Fourth of July, or the full beauty of our asters before the early frosts. Most seed must, however, be sown in dry, warm soil, or it will never germinate.

When the ground is ready and the seed sown our work is but just begun. For a time, to be sure, we can only wait as patiently as may be for the tiny shoots, but with those for which we are watching we shall undoubtedly find growing many more that we did not sow and do not want. Tiresome is the work of weeding, but tireless must be the weeder if he hopes for success. Do this as you should do everything, *thoroughly*. Pull up by the root and utterly destroy every weed as you find it. To break or cut them off with the hoe simply makes them grow better. To pull them up and leave them to die on the ground will, like transplanting desirable plants, make them thrive. If we think that we have destroyed every one to-day, careful eyes will find at least one more to-morrow, and here as in all the work of life we shall find that "Eternal vigilance is the price of success."

If all here present are not gardeners in the usual acceptance of the term, they are in a much higher sense. Our minds and characters are gardens in which each one is in great measure responsible for his own failure or success. The soil is prepared for us in early childhood and much of the seed sown. Shielding a child too carefully from trouble is like smoothing the top of the soil in the other garden and

leaving the depths undisturbed. Every one needs the discipline of trouble as every garden needs the spade.

Every person is constantly sowing around him seeds, either of figs or thistles, which are sure to bear fruit in the lives of those around him. As teachers and parents, some have greater responsibility than others. Crowding here is, as in the other garden, disastrous. No child's mind can grasp everything but will intuitively lay hold on what is best suited to itself. Sow only the best seed—pure words, loving deeds, kind acts. Seeds of kindness, honesty and fidelity, like the peas, should be sown early, but those of knowledge may safely wait.

Most of us have passed the springtime and are now in the busy summer of life. No matter how much care has been used there are weeds—bad habits, to be found growing in every character. Here each must do the work for himself and upon his faithfulness depends the beauty of his life.

A weed found growing in every community is sometimes called procrastination, sometimes harsher names. A meeting, perhaps like this, is appointed at ten o'clock. At a little after eleven the president calls the assembled few to order and soon the first speaker takes his place. No sooner has he commenced to talk, however, than the door opens and a few more come in. Quiet is restored only to be broken again by more and still more tardy ones, till by noon the hall is well filled. Many of the company not only lost the best paper given, but annoyed the speaker and disturbed those who were in season. I know one man, whose garden is freer from weeds than most of ours, who never heeds the call to dinner till he has hoed out his row, thus keeping the meal waiting and delaying work in the house. If we could "see ourselves as others see us," many of us would make a desperate attempt to catch up and keep up.

One of the weeds which demands our constant care as men and women is fretfulness. I presume all like myself often resolve that they will conquer this habit, thus hoeing off the top, but how many of us can say that this plant is never found in our gardens? It is very easy by giving way to our feelings when something is not done as we would do it, or when something is forgotten which we consider important, to fret about it and it may require some determination to speak pleasantly or some biting of the lips to keep still, but which is the better way? Which makes those around us and ourselves happier? Which will be most likely to make the careless or forgetful

one remember next time? If each one present will destroy this weed in his own garden there will be less of the seed ripen to be sown in those of our neighbors.

Another weed which grows so large as to cast a dark shadow on some lives is gloominess. If any one when despondent or, as the saying is, when he has the "blues", will count up his blessings, he will find that they far out-number his troubles. Many of our blessings we never think of till we are deprived of them, while we are very likely to magnify our troubles. Did you ever know a person with whom you would exchange places and lives? Mr. A may have more money than you, or Mr. B may have some office which you have long wanted. Learn all you can of the daily life, cares and worries of both and you will feel satisfied that you do not care to exchange places with either if you must live his life and do his work. Every burden is fitted to the shoulders that must bear it. Let us learn to make our own as light as possible by looking on the bright side of life.

Two varieties of the live-forever family which all recognize as weeds, although nearly every one finds one in his own garden, are known by the names profanity and slang. All of us know that an oath or a slang expression weakens our speech and injures us in many ways, yet there are few of us who have destroyed the weed. It was planted in many of the gardens by our fathers and mothers, but I hope none of us are planting the same for those who come after us. Daily, yes, hourly, will be the struggle if this family of plants is eradicated from our midst, but how much more beautiful will be the gardens of our lives if we succeed.

How many of us, sisters, are careful to be as neat in our personal appearance, in the care of our houses, in setting our tables for our own families as for guests? How many of us speak as pleasantly to members of our own household as to those who are strangers to us? How many of you, brothers, clean your feet as carefully when entering your own kitchen as when you go into a neighbor's? How many of you ever thank your wives and daughters for the favors for which you are so grateful from a stranger? Is not true politeness at home a plant which should be carefully tended while we root out all shams which make us urge a visitor to come again soon and when she is hardly out of hearing remark, "O how tiresome she is!" Which make us a scold at home and a gentleman or a lady away? Let us remem-

ber that true politeness comes from the heart and cannot be put on with a dress coat, then laid away with it for another state occasion.

All ought to root out false pride and in its place plant the real, genuine article. How foolish to be proud of a pretty face, fine clothes, sweet voice, etc., all accidents of birth or circumstances! On the other hand, who is and should not be proud of being one of America's noble men, helping to make all around him better and happier? All should have sufficient pride to make the best possible use of all talents given us by an ever bountiful Father.

The last weed I shall mention and one which I hope none of us have to contend against, is dishonesty. I do not refer solely to the taking of thousands of dollars, but to taking advantage of others in petty dealings, in the weight of a few pounds of sugar, putting the largest, fairest apples at the top and recommending them as alike all through, or praising an animal which—well, which for reasons best known to yourself you are particularly anxious to sell. Let us so live that we can fearlessly look every one in the face, remembering that "An honest man is the noblest work of God."

Many seeds we planted in our minds and hearts for which we are not responsible and many more are being planted every day. The books we read, the work we do, the company we keep, are constantly changing our lives.

We may get some good from every one into whose company we are thrown, if it be only because we see in them a magnified image of some plant which we know should be uprooted in ourselves. We all want people to think and speak well of us, we desire money and all forms of material prosperity, but of how little importance are all these when compared with our minds and hearts. We alone are responsible for these. Seeds are sown by others but we alone can do the weeding. Let this be our first care, that in the sight of the Great Master in the last harvest, no life be found overrun with weeds which we have allowed to grow.

The next essay, written by Mrs. Simpson of Bangor, was read by Miss Vesta B. Edgecomb of Turner.

THE ARRANGEMENT OF FLOWERS.

By Mrs. CORELLI W. SIMPSON.

Before Eve walked in the garden, flowers bloomed in Eden. Was she, to whom no flowers were forbidden, ever known to frown upon any of the beautiful blossoms that had been her favorites and to call them weeds, merely because of their abundance?

Any particular rules, as to the arrangement of flowers, would, in a few weeks' time, be utterly worthless. Fickle fashion changes so continually that the roses of last month all had to be replaced in the florist's window by lilies of the valley. But a week since the graceful lilies were banished to make room for the yellow chrysanthemum. Yesterday it was the fragrant white lilac and to-day it is the modest violet which occupies the chief place in the ball or drawing-room, and the florist, like the milliner and dress-maker, is expected to keep pace with the various moods of the exacting dame.

Fashions may rage in flowers, but the beautiful and fragrant flowers, like lovely faces and exquisite poems, can never be out of fashion. A lady friend—a true colorist—and of whom it can be said that the soul of the artist is portrayed in every touch of her brush, in conversation with me to-day, remarked that “a sunflower will always be beautiful in spite of Oscar Wilde!” A popular freak may make the dark hair and rich complexion of the Spaniard supersede in public favor the rage which the hair of Eugenie caused; nevertheless, the Titian “red” hair accompanied with its fair complexion and its corresponding delicacy of mind and perception will be none the less beautiful.

Commerce, by the daily communication of specimens, has made the once rare exotics now almost common flowers, and we see in greenhouses, clover, violets, buttercups and daises advertised as “very scarce and high in price.” In the matter of floral decorations, to be successful, one must understand the art of producing the necessary harmony of colors, the fundamental rules of which are taught in the kindergarten. Every child is there made to understand that there are only three primary colors—red, blue and yellow. From these arise the secondary colors—orange, composed of yellow and red; green, composed of yellow and blue; and purple, composed of blue and red. These form contrasting colors to the three primary

colors, with which they are in harmonious opposition, as orange with blue, purple with yellow and green with red. From the combination of these secondary colors arise three tertiary colors—olive, composed of purple and green; citron, composed of green and orange; and russet, composed of orange and purple. The tertiary colors are in harmonious opposition to the secondary colors from which they are combined, but they form neutral tints to the primary colors, with which they harmonize. Red, blue and yellow harmonize and may be placed near each other, but purple should not be placed near red or blue, as it is composed of these two colors; for the same reason orange should not be placed in juxtaposition to red or yellow, the rule being that no primary color should be brought into contact with a secondary color of which itself is a component part; nor any secondary color brought into contact with a tertiary color of which it is a component part. I find exceptions to this rule, but there are colors and colors, and tones and tones of each color, until one is so blended into the other that we can scarcely discern where one leaves off and the other begins. One of my objections is the juxtaposition of the green and blue. One never wearies of the varied Scotch plaids, in which the green and blue figure so harmoniously together, and the peacock's feather being toned by the mass of golden brown which is flecked with the same colors will never cease to fascinate the lover of brilliant coloring; and, too, every blue flower has its own green leaves with which it is harmonious. Nature, so lavish in her blue overhead, is choice of her blue in the blossoms, but there is one dainty floweret whose blue tint is not reproduced in the floral kingdom. You ask its name? The little blue eyes will answer you in the one word, forget-me-not. Another general rule is, that the secondary and tertiary colors and the neutral tints arising from combinations of the tertiary colors—as brown, slate, grey, lavender, maroon, etc., should be used in lavish quantities, and the primary colors in sparing quantities for heightening the effect. In combining red, blue and yellow flowers, use nearly twice as many of the blue as of the red, and nearly twice as many of the red as of the yellow, to produce a pleasing harmony. One should always consider well the back-ground as well as the light to which the flowers are to be subjected. The whole arrangement may be spoiled by an unsuitable back-ground, and artificial light so changes the tints of many flowers that the charm of harmonious effect in the light of day proves a mortifying failure in the evening. As every

face and its natural complexion is best set off by its own natural hair, and as no dress can be more becoming than the one which will best harmonize with the hair and eyes of its wearer, so a flower can be accompanied with no tint better suited to grace its stem than its own natural leaves, and we are thankful to say that the time has long since passed when it was considered necessary to strip a plant of its leaves and conceal its stems, to make its blossoms presentable. Let a person who has never studied true coloring, and who looks upon the "hanging forests," the wide-spread meadows with their hillocks and velvety dales, rich in their varied lights and shades, as one mass of one color, namely, green—a composition of blue and yellow—I say, let such a person attempt to form an harmonious arrangement of the various leaves without flowers, he would find it no easy task. There are nearly as many shades of green as of flowers, and a proper blending of the shades of green requires taste and experience.

Allow me to illustrate the absurdity once called a bouquet by a short story :

John has loved his Eliza from his earliest recollections and Eliza loved her John with equal fervency. But a stone wall divided the broad fields of their sires ; but Eliza was miles away at the time to which we are referring upon a visit. As John in his loneliness, caused by the absence of his Eliza, walked around the farm and among the flower beds, gorgeous to John on account of the number of plants huddled into each, and as is said of the crazy silk patch-work quilts "no two alike," he paused before the "crazy" colored strip beneath the front windows and mused aloud, "If women could get that coloring into their rugs they'd be beauties !" But just now a happy thought occurs to the warm-hearted John. "I will send Lize some flowers,—flowers? Yes, a regular built bowkay." To think, for John, was to act, and in preparation for the building (already a massive, brilliant structure arose before his mental vision), he cut flowers of every hue, size and shape, throwing them in a promiscuous heap upon the stoop, which ran along the front of the porch. After having, in this manner, collected, as he termed it, a "cart-load" of flowers, he proceeded to divest each individual blossom of its natural habiliments. Not a leaf would he allow to remain. The pure, chaste flower-faces seemed in vain to look up and plead for their rightful gowns of tender green, but the practical John said, "A bowkay of posies wouldn't be a bowkay if 'twas stuck full of

green leaves." Next, he brought a ball of coarse, stout twine which, in his earlier years, he had intended for a kite string. Sitting upon the upper step, he commenced in earnest to construct the message of love for his dearest Eliza. First he selected a tall, large, dull brown colored zinnia, not at all for its hue, or for the flower, but because it had a straight, stalk-like stem. Tying one end of his string firmly and well up to the petals of the flower, he laid it upon his knees and proceeded to take the *nearest* blossoms, without regard to size, color, form or fragrance, and, placing them in a circle close around the zinnia, he bound the twine many times around the stems. Proceeding thus the "bowkay" grew in height, circumference and in weight. "There!" he exclaimed as he had drawn the cord so tightly as to break the slender stems of mignonette and forget-me-nots and other fine flowers. "Those look purty and graceful enough when growing, but they are peskily tender-like for a bowkay," and giving it a vigorous shake the "pesky," tender blossoms showered down around his feet, but, at the shaking, he found (using his own words) "the concern to topple." As a remedy, by the aid of his jack-knife, he sufficiently sharpened a stick to push it up among the tightly-bound stems. The stick nearly at the top resisted, but John possessed a firm arm and a powerful will and a final thrust sent the poor zinnia flying into the air. The string was broken and the choked and smothered blossoms rolled out over his knees, down the steps to the ground, but John's heart was full of love and nothing could ruffle his temper in *such* a frame of mind. Piling up another "cart-load" of flowers, he re-commenced. He tied his stick to another neutral-tinted zinnia and he was successful beyond his most sanguine expectations, because his string held out to the end of his flowers and his flowers to the end of his string. Would not his Eliza measure his love by both? He saw but one fault, too many white flowers happened to be piled on one side together, but John was a young man of resource, equal to the emergency. He twisted a half-blown, red peony bud from the bush near the stoop, and, taking a pin from his well-filled pin-cushion—the edge of his vest—he fastened the bud to the inside of a large calla lily; finding that a success, he fastened two more above, exclaiming, "By hokey! Eyes and mouth! That's me, and just in the nick of time, too." He hailed the passing stage-driver, to whom he confided the "structure" and message, "A bowkay for Eliza."

Not less absurd and grotesque are the devices wrought with flowers for public occasions, and more particularly at funerals. It would be no more ridiculous to build a roof over the forest than to bring such quantities of flowers which need the pure air to the very heavens, as are seen in the various fantastic designs at halls, churches and even in dainty libraries. As I pause in writing, I can see a branch of an apple tree from my window. Yesterday it was clad in an icy armor which reflected in the sunlight as if bedecked with diamonds. To-day it is wrapped in a mantle of snowy ermine no less beautiful in its stainless purity, "still life" it is called, yet, in the stillness of summer, the vital current with ceaseless motion courses to and from its heart to every twiglet upon its outermost branches. This branch will scarcely be left bare long enough for me to sufficiently admire the wonderful intricacies of its crossings and interlacings of its numerous twigs and the many neutral tints of its outer garment, before the delicate green will peep forth followed by a wealth of exquisite pinky blossoms. The red buds, the patches of blue heaven in the background and the yellow in the center of the blossoms, also brought out by the sunlight through the green leaves, complete the perfection of coloring which bring those subtle modulations of delight. Imagine all the blossoms strung into a long garland and then woven like a thread into letters and devices upon a bed of white carnations. After the first glance of eager curiosity as to the number of flowers, the whole thing assumes a most grotesque appearance. All devices and what are termed "artistic" designs should be carefully avoided, for when the decorator tries to out-do Nature, the only perfect pattern, the result is an unmistakable failure. Aim at the *simplicity of nature*. We can remember when every painted flower piece had its flowers placed exactly in the middle of the canvas. A better knowledge of the harmony of coloring has produced a great variety of styles and each artist can now revel untrammelled in his or her conception of the beautiful. As our lives are successful or otherwise only by association or comparison, so flowers are made to appear more or less beautiful by arrangement or contrast.

For distant effects yellow is by far more effective than any other color. Note from the carriage or car window the brilliant golden rod vying in grace with the over-towering elms, and what can be more grandly exquisite, upon an October afternoon, than the glory reflected by the setting sun upon a row of maple trees, with their halo upon halo of canary and yellow leaves?

I have a fondness for specimen glasses (if the glass vases are crimson or green ; the delicate shades—just a tint of color—are prettiest) for tall, choice, fragrant flowers, each holding one blossom or one spray of blossoms, of course with its own green leaves ; and glass trays for low-growing flowers, in which case sand or moss should be used besides the water.

In cutting, a knife will not bruise the stems as do the scissors. Ferns, the most beautiful for decorations made chiefly of green, should be dipped into tepid water before placing them in position. A cool, dark cellar is the best place to keep them until ready for use. As a rule, very fragrant flowers, as lilies, lilacs, &c., should be used in very small quantities in the dining-room or library, and avoided altogether in the sleeping-room. Small, neat plants are most effective ; if large sized they tend to give a heavy appearance. In finger glasses several rose-geranium leaves should float and each may be pierced by the stem of its blossom, allowing a bloom to rest upon each leaf. For the mantel-piece larger and bolder varieties of flowers may be used than for the tables, but they should be so placed as to avoid all appearance of crowding. Trailing plants look well drooping from such positions, as clematis, ivy, hops, passion flowers, colloseum ivy, oats and wild field grasses, asparagus, carrot tops and ferns are all effective when enough of the green cannot be found to accompany the flower.

Ferns are especially useful, as they can be cut when too large and the ends used. A beautiful pair of bouquets representing fruit and flowers can be arranged, one of the high-bush cranberries and white snowberries, and the other of London pride and feverfews or white lilies, each intermixed with lace-like flowers or grasses to tone the "invincible scarlet" effectively ; the scarlet only showing through the hazy veil of the fine thread-like flowers as through smoke or mist. If in doubt how to arrange flowers to send to a friend, send them lying loosely without any attempt at arrangement, but only send two or three varieties, never more. If doubtful what flower to use when partially arranged, take a white flower, as it can be safely used to separate any shades. The lily is (not the *lilies are*) a symbol of purity, therefore, one lily as a gift is more speaking than several. The same may be said of many other flowers. Small, neatly-arranged baskets of flowers are always attractive. Zinc pans should be made to fit into them to hold the damp sand or moss. Roses all of one color fill these admirably, their own foliage preferable (with half-opened

buds and their young flower shoots) even to the fronds of maiden-hair fern. Many of the silver-edged plants are pretty in themselves, but they cannot well be mixed with other flowers if pure white flowers are used.

Flowers for the hair, corsage or for the hand should be flowers of delicate structure and exquisite fragrance. Those in the hand and corsage being under the close inspection of the eye, extra care should be taken that there be no violent contrasts. As one plant needs sunshine, another shade; one requiring moisture, another dryness; no general rule can be given for their cultivation. One person pets the sweet brier, another the heliotrope; one will prefer the scent of the lemon verbena, and another that of the sweet pea. That is well. We would not like a stereotyped sameness in the arrangement of flowers any more than we would in faces.

Finally, to those seriously disposed to possess this elevating and inspiring art, I would say, go to the fields and woodlands, by the meandering brook and by the hill-side, collect these plants, one at a time, from their native haunts, and study their habits and their needs by cultivating them in your own garden. Draw them in black and white, faithfully delineating each curvature and graceful outline, not only the blossom but the whole plant. Next copy each hue and shade, each tone and semitone, either in water colors or in oils. Let no tint, however subtle, escape your eye, remembering "to take care of the shadows, the lights will take care of themselves." And lastly, I ask you to describe in your own words, not only the plant botanically, but to discriminate between the velvety and the satiny texture, the honeyed, trailing sweetness and the delicious, spicy odor, the dawning of the bud and the decaying of the flower and all the sweet loveliness and the fine fascinations until, in the glow of the effort, every pore is open to the pleasurable sensations produced. Then, and not till then, the flowers become like old-time loving friends, and come into graceful harmonious arrangements, without a thought of how it was accomplished.

In the absence of the writer—who is a widely-known and successful grower of the coleus and the originator of some of the finest varieties of this grand bedding plant we have ever seen—the following essay was read by her brother, President Pope.

SOME HINTS ON MAKING COLEUS BEDS.

By Miss L. M. POPE.

The Pilgrims came to this country so thoroughly imbued with ascetic principles that the love of things beautiful, even in nature, seemed to them a snare to the soul, whose primary occupation was fighting the pride and vanities of life. Then their constant struggles with the deprivations and hardships of pioneer life left them little time for the indulgence of æsthetic tastes, if their consciences would have permitted such indulgence.

There must have been a grim fitness in the diminutive log cabin, with its scanty furnishings, surrounded only by the growth of wild plants indigenous to the soil. It certainly might prove interesting and instructive to note the first beginnings and growth of a taste for out-of-door decoration, had we the means of tracing it.

We can imagine, as constant labor for bare existence became less of a necessity, our grandmothers found time to look around and enjoy the beauty by which they were surrounded, and, admiring some of the wild flowers, may have transplanted them by the window to cheer their hours of labor. Then, as the log house gave place to the simple and still perfectly plain frame house with its increasing comforts, possibly the grandfathers may have begun to miss the shade trees that they had sacrificed in their haste to make space to raise food for their first pressing necessities. They found themselves obliged to plant small trees to replace those grand old forest trees and wait a good part of a lifetime for them to attain any considerable growth. Their wives and daughters, lending their aid and taste, may have planted the hollyhock, sweet william, jonquil, and possibly a few rose bushes, in beds each side of the door. These floral pets must still occupy a place close to the house, as there was as yet no fence to protect them, nor would they have looked well or flourished in the weedy, untrimmed turf around the house. Then followed the big, square, angular house, with its equally angular front yard, and the fitting accompaniment of regular geometrical flower beds, ungraceful in themselves, but preserving the harmony of the whole and the true exponents of the characters and tastes of their originators. And as neglect and slovenliness seem incompatible with straight lines and square corners we may presume they were well kept and weeded.

As wealth and culture increased they found visible expression in the artistic structures which the architect has fitted and accommodated to the growing social and domestic needs. The wide-sweeping and well-shaded lawns or close-cut grass plats constitute the most appropriate surroundings to such homes, and conspicuous objects of attraction on these grounds are the fanciful beds cut in the turf and the well-trimmed borders by the gravel paths and carriage drives. As the tall, irregular-growing perennials are in no wise fitted for such beds, if retained at all are consigned to the background, to be used where screens are needed or massed in large beds to be seen from the distance.

Lawn beds and borders require low-growing plants capable of being cut back and kept within lines. As their beauty depends on their being in contrast with the green of the lawns, we must have thickly-flowering or self-colored plants, and prominent among the latter are the coleus.

The coleus, being a tropical plant, requires hot-house protection during the winter. Very few people succeed in keeping them through the winter in the house because of varying temperature; for if sufficiently hot during the day, the temperature is too low during the night, they finally lose their leaves and die before spring; so that persons who do not feel like going to the expense of renewing them every spring from the florist are obliged to go without or may keep along a few scrawny specimens of the stronger growing sorts.

My admiration for this charming bedding plant induces me to offer some suggestions in regard to its culture and the feasibility of adopting them pretty generally for bedding purposes even by persons who do not feel like paying the full price for even an ordinary coleus bed every year. They are a very rapid growing plant and easily propagated, in fact it is the exception to lose even one cutting when put to root in the least favorable situation. So that if one could procure a dozen medium-sized plants of the florist as early as the first of April or as soon as it will do to start a hot-bed, you can cut the plants back, putting the cuttings to root, and the old plants will force more cuttings, as it takes but one week to root cuttings with ordinary bottom heat, these slips can be potted off by that time into small thumb-pots and sunk into the sand covering the hot-bed. In two or three weeks at most they will need topping and these can in time be used for a later set of slips to be in their turn rooted, and this will bring the second rooting no later than

the second week in May. As coleus should never be set before the second week in June it leaves this last set of slips almost a month to grow before bedding out and there must have been slips on the old plants to have been rooted, so you can by this process get a large increase of plants by the time you are ready to set them. This is not as much like the milkmaid's counting as it might seem, for a friend has tried this method for several years with perfect success.

As there is some trouble attending the making of hot-beds I prefer a frame bed, heated by a small kerosene lamp, constructed after the following method. The frame which we have used for several years, and large enough for ordinary use, is sixteen by thirty inches, fifteen inches high in front and eighteen at the back. About half way from the top are nailed cleats to receive common roofing slates to form the bottom of the bed, on which are put two or three inches of wet sand. Bore a few small holes below the slate to supply air to the lamp, which may be very small. Fasten a piece of sheet iron just above the lamp chimney to distribute the heat. Cover the bed with a sash and set in a shady place. The first cost of this may be more than a hot-bed, but it has the advantage of being ready at any time when once made.

Then I would suggest making larger beds composed only in part of coleus, the center being made up of inexpensive plants of large growth raised from seed—ricinus, or castor bean, makes a fine large specimen plant for the center, surrounded by six or eight cannas, these in turn by zonale geraniums, of which most people have a good supply in the spring. Outside of these coleus, which may have still another row of blue lobelia, which will show a line of blue mist during the whole summer in fine contrast to the green of the turf. Still other beds with the coleus plants set at some distance apart may have a matting of some low-growing fancy foliage or fine flowering plants of contrasting color forming an undertone. The matting planted in the spaces may be seedlings like sweet alyssum, white or blue lobelia, or anything that will form a close mass of color.

I know of a bed where the coleus were put at some distance apart at the setting, and then as they needed cutting back, as they must be to keep them of uniform size, the slips were set in the spaces and on the front edges, and before the summer was far advanced the bed was well filled, looking nearly as well as if set close at first. As the coleus can not be set in beds before June, these beds would be empty, unsightly spots on the grounds after the grass had started

and everything else become attractive. Now these beds may be filled in the fall with spring-blooming bulbs that would be out of flower before time to set the coleus, or with pansies set in the fall or early spring. These beds would prove so attractive that there would be less danger of putting out the coleus too early, as is frequently done, to the detriment of the bed for the whole summer.

Not all of the coleus are of equal value as bedders when the beds are to be exposed most of the day to the full rays of the sun. The old velvety maroon variety called *beschaffettii*, the Spotted Gem, Golden Bedder, Black Prince, Burning Bush and Butterfly are among the best to grow in the full light, and least liable to fade, and will give a sufficient range of color to make a good-sized bed with a variety of plants. Then there are more delicate and brilliantly-marked varieties that must be grown in partial shade to insure success. The large-growing varieties will not do to set in beds with the slower-growing plants, but are fine for rustic baskets and lawn vases. The most satisfactory effect I have ever been able to get from planting coleus by itself was in a short border made up of a shaded line of four colors, the outside black, the next maroon, the third bright mottled and the fourth very light, this so situated that from the house we looked across it lengthwise and the colors blended and produced a much finer effect than the same varieties arranged in a circular bed similarly situated.

To the superficial lover of plants this method of propagation may seem too much trouble, but those who truly enjoy plants and their culture will find ample reward for the time and pains spent. Those who may not have a gardener to set and care for the beds and borders essential to the beauty of their grounds can comfort themselves with the knowledge that no plants, however beautiful and perfect, tended by another, can ever possess the interest and charm that comes with the personal acquaintance we must feel for every plant, when our own hands have supplied their wants.

After the reading of the above essays, a short time, only, remained for discussion. Mr. Atherton, Capt. Jordan, Miss Edgecomb, and Rev. Mr. Kimball entertained the audience with some pleasing remarks, and the meeting closed with singing by the Turner Grange Choir.

SECOND DAY. FORENOON.

PRACTICAL EXPERIENCE WITH SMALL FRUITS.

At the opening of the session on the second day, the Secretary read the following letter from Mr. I. C. Jackson of Vassalboro', giving his experience in the culture of the small fruits.

Dear Sir:—In reply to your letter of inquiry in regard to my experience in the culture of small fruits, I will say that in 1874 I commenced with the cultivation of strawberries, setting about one-sixth of an acre with Wilson, Col. Cheney, Green Prolific, French, Downer and Nicanor varieties. Soil, rocky loam and badly run out; put a little old manure around plants, when set. The next season, I sold \$33.00 worth; have forgotten the number of quarts taken off and also the price received per quart. The same season, setting enough more plants to enlarge the piece to three fourths of an acre, and using no manure, except a crop of green oats plowed under the preceding summer. During the season of 1876 sold 1504 quarts at seventeen cents per quart. The cost of cultivation and winter protection was about \$30.00.

Having sorrel, barn-grass, and honey-suckle to contend against, this is the only crop of strawberries in the nine years of my experience that I consider worth mentioning. Taking in consideration the cost of setting and cultivating on rocky soil, the weeding being done mostly by hand, as I grew them in matted rows; also the liability of late spring frosts when they were in blossom, and the cost of covering them, I do not consider them a profitable crop with me, though I think they would do much better on clay loam land.

In 1880 I planted one-sixth of an acre with Philadelphia Red Raspberry; also, about the same amount of land with Mammoth Cluster and Davidson's Thornless Black Raspberry. The land being in a fair condition, used but one shovelful of well-rotted barnyard manure to the hill with the Red Raspberry, setting them two and one-half by four feet. With the Blacks I used no dressing whatever, setting them three by six feet. The next season sold ninety-six quarts Red and ninety-six Black, at fifteen cents per quart.

In the spring of 1882 I set an acre with Turner Red Raspberry and Brandywine, using the same quantity of dressing to the hill as before. Also, set three-fourths of an acre to Snyder and Taylor Blackberries, setting the last mentioned three by six feet, using no manure on land that was in fair condition. That season picked from the Philadelphia 320 quarts, and from the Black Raspberries, 288 quarts. If the Blacks had not winter killed, should have got double the quantity; received fifteen cents per quart for all.

In 1883, picked 285 quarts Red and 167 quarts Blacks; obtained from the one acre of Turner and Brandywine 224 quarts.

The Philadelphia was found to be too soft for market, and their color was not liked, being a very dark red. The Black Raspberries winter killed badly; had some difficulty in selling the berries, and therefore discarded both varieties.

In 1884, picked 1696 quarts from the Turner and Brandywine Raspberries, 320 quarts from the Snyder and Taylor Blackberry, and received twelve cents per quart for all.

The Turner is of good color, good flavor, an immense yielder, and an excellent berry for family use and the home market. The Brandywine is a good yielder, of good color, not so good flavor as the Turner, but very firm, and good for the home market or to ship. The Turner is early. The Brandywine is late, continuing in bearing two weeks after the Turner is gone.

The Snyder Blackberry, from some unknown cause, part of them, failed to make a good growth. I think, however, they were set rather too deeply; yet it has proved perfectly hardy, is early and a good yielder. The Taylor is nearly as hardy as the Snyder; is also a good yielder; season, medium to late.

The past season, 1885, picked 1792 quarts Red Raspberries, and 1152 quarts Blackberries. Of the three-quarters acre of Blackberries, but one-half acre was in bearing.

I paid two cents per quart for picking, each season, which is to be deducted. I have never kept any account of the cost of cultivation, either of raspberries or blackberries; have cultivated them about four times during each season, horse and cultivator doing about seven-eighths of the work until the last season, in which they did all the work, the ground being so well shaded they did not seem to need anything more. I have not used any dressing on any of them since they were set, with the exception of the past fall, when I gave them a liberal top dressing. I intend to set one acre of Brandywine and

Cuthberts in the spring; have a few Cuthberts. They are an excellent berry, large and of good flavor, and I think would be good for shipment. Season late.

Yours truly,

I. C. JACKSON.

Following the reading of Mr. Jackson's letter Mr. Arthur I. Brown of Belfast, a very successful commercial grower of small fruits, gave his experience in their culture and marketing, in the following interesting paper.

A TALK ABOUT SMALL FRUITS.

By ARTHUR I. BROWN.

When the Secretary of the Maine State Pomological Society invited me to read a paper before this body on the subject of "Small Fruits and their Culture," I gave a ready assent. It is the one branch of fruit culture on which I am enthusiastic and in which I take a keen delight. Particularly as to the blackberry, the raspberry, and the strawberry, which a few years ago were so plentiful, growing wild without care in the fields, the pastures, and in the forests of Maine. To-day in many sections they are well nigh extinct.

When I was a boy, many were the dewy mornings that I followed the mowers to glean the laden strawberry stems from between the swaths; many were the long still summer afternoons I spent in the back lot, beside the brook, and filled my little pail—and little stomach too—from the generous vines that flourished in the hollow that I knew and loved so well. The glamour of those days is on my spirit still, and the taste of those rich berries is something more than a remembrance.

I did not understand it then, but *now* I know that when the tired, sunburned boy reached home, his dear old mother's smile, her arms about his neck, her words of tender praise, were sweeter far to him than all the strawberries in the world. He thought in his little mind that mother was in raptures over the hard-earned fruit and he was proud. To-day he knows 'twas all for love of him, and he is prouder still. As my legs grew longer, I took longer excursions into the forests, over the hills, into all the remote places where wild berries were to be found. Always with the same keen enjoyment of freedom and beauty and stillness, with the same love for delicious fruit; and I am forced to acknowledge, the same vanity concerning my success.

Even after I became a man, it was my chief delight to leave behind all toil and care, and take a holiday in the forest. A basket well filled with berries was to me all that bags of game are to the hunter, or baskets of fish to the angler. In these midsummer excursions of mine it was a singular fact that when taken alone they were restful and soothing. Companionship destroyed the charm and made a dog of toil. Alone, did I say? No, not alone—Did not the flowers look up at me through dewy eyes of pearl? Did not the birds sing for me, the leaves whisper as I passed? Did not all nature speak to me in mysterious, sympathetic tones? Did not the trees bend low to read my thoughts and tell them to each other? In the midst of the woods there was a little meadow—russet with yielding moss and yellow with golden rod—like an enchanted lake within a continent of verdure.

The beach was white with wild clematis, and pale wild flowers gleamed like pearls upon its bosom.

I see it again to-day, in fancy,
Peaceful, still and sweet.

I see beyond it the old road made by the lumbermen. Long since the trees locked arms above it; and it seems a portal to the realm of silence and darkness. I enter. No sunlight penetrates this avenue except by stealth. The giant trees are hoary with the moss of age. The partridge whirrs away amidst the labyrinths. The noisy squirrel becomes silent, and, ensconced behind some sheltering bough, peeps out at me from his concealment; the blue jay cries in terror as he flies, and the solemn owl interrogates, who? who? Behind me the portal shrinks and fades. A good mile further on the straight road divides into crooked wood paths that soon lose themselves. I follow one a little and turn around a promontory of ledge into the head of a ravine where is a tiny spring. A carpet of soft, delicate green moss has here crept over every rock and every fallen trunk and every bit of earth. I lean against a tree and look in vain for any sign of man's invasion. I hear a gentle breathing among the leaves and feel a movement of the trunk as 'twere a pulse. Nearer to the peaceful heart of nature man can never come. This is the actual, the living forest. Down this ravine at every step the eye sees beauty. Every glen and grotto is decorated and hung with vines and ferns that are so delicate they wave without a zephyr and tremble even in this holy calm. As I advance it widens, the walls sink lower and are gone. Presently the sun glimmers through the tree

tops, the long, dark vistas end in light and the forest is behind me. A path leads round a little hill to a forsaken camp. Tall thistles grow about the door. Decay has fastened on floor and walls and roof. Outside the glistening stumps stand, thick, like headstones, each showing where a giant fell. Wild raspberries are everywhere. The bushes have forced their way through every heap of brush, they bend in pity over every fallen, mouldering trunk, they fill the hollows, they fringe the outlines of the ridges. A new forest is springing up also. Vigorous saplings are pushing themselves into prominence with all the assurance of green youth. * * * *

* * * Man and nature are ever at war. Here she is destroying the camp which he has built, and is rebuilding the forest which he has destroyed. He is active, she is patient: he is pitiless, she is merciful. But the ideal must yield to the practical till in the late afternoon I recline upon a bit of grass in the midst of this forest amphitheatre, my well-filled pails at hand, and watch the trees reach out their arms between me and the declining sun. The wild bee, drunk with nectar, sways past on his homeward way, the woodpecker taps upon the resounding trunk of yon dead tree. In the deeper woods the night bird calls his mate. I enter the dark aisles, the ravine, the labyrinth, the avenue; I cross the jewelled meadow, and finally emerge from the forest to see the last rays of the setting sun, shining on the roof and gables of the little cottage home upon the hill.

From this poor description of one from hundreds of expeditions, it may be seen that I naturally should turn my attention to the cultivation of small fruits. I have never cultivated large areas, but for some twenty years I have been experimenting on varieties, methods, and in detail. In considering the subject in its practical aspect I do not presume to instruct the nurseryman or the market gardener who are already large producers, but address myself particularly to the novice and to the amateur.

And first let me remark that fancy plots and showy arrangement, although very desirable from an artistic standpoint, are totally unappreciated by the plants themselves. They have nothing of the dude or of the exquisite in their nature. They require and will repay good cultivation, but whether for use in the family or for the market, they should be produced upon business principles. In general it is unwise for any person who depends upon the soil for his support to place sole reliance upon any one crop. Unforeseen contingencies

may render such a course disastrous. In small fruit culture drought is most to be feared, and were I to engage in that exclusively I should first provide an abundant supply of water. Small fruits, especially the strawberry, are hard drinkers, and should be well irrigated if at all. A whole crop is sometimes cut off for want of water. At such times to him who can irrigate, a drought is profitable.

Now let us consider the blackberry. It delights in a moist, but not wet soil. Clay is too heavy and gravel too light. If possible, I would choose a place where the snow would lie evenly in winter and would not drift over the bushes. I should prefer a southeastern exposure, and that there should be a natural protection from north winds. The ground should be mellow, rich and free from sods. Nature may be the best guide in the selection of soil and location. I had a piece of land which had been cultivated as a garden for five years and in spite of plowing, harrowing, cultivating and digging, the wild blackberry bushes were determined to grow. I took a hint from this, planted it with blackberries and got wonderful returns. The choice of the best variety is of the first importance and must be settled by either individual or neighboring experiment. The loss of money, the vexation and disappointment that I have undergone has well-nigh discouraged me. I have been the prey of the peripatetic nursery agent.

He has beguiled my shekels; he has deceived me for lo, these many years. At last in utter desperation, I set apart a piece of land which I styled my experimental grounds and planted out several supposed-to-be standard varieties. Some produced small berries, some produced none, some were too intensely sour, some were coarse with large seeds, some had a core, others were fairly good, one, the Agawam, was excellent in every respect. I pin my faith entirely on that. Still I would not recommend it unreservedly to anybody outside my own vicinity. I have learned—what probably numbers of people knew before—that a variety which is unsurpassed in one locality may be quite ordinary in another. Different soil may have quite the same effect. I am informed that the Snyder is a grand good berry in Kennebec County. I should advise any one who contemplated planting a considerable area to experiment first with the Agawam, the Snyder and the Bangor, and choose the best from these. After finding out what is best suited to your soil, your locality, and your palate, it is well to plant out only that sort. There is a number of methods of propagating the plants. It may be done by

cutting the roots into pieces some three or more inches in length and planting them in trenches. It may be done by cuttings, or by taking up the shoots that spring up near the parent stock. But these are matters for the nurseryman to consider. If you have settled as to the variety in your experimental grounds you can increase your area by planting pieces of roots or by taking up shoots. By the first plan you will get an abundance of plants but a crop of berries will come one year later than when the latter plan is pursued. The plants should be set out in the field where you propose to cultivate for berries as soon in the spring as the frost is out of the ground. The stalks should be cut off about six inches from the ground and the more roots it has the better, although they will grow with few. They should be set a little deeper in the earth than they stood before they were taken up and with the same side towards the south.

The earth should be put carefully about the roots and they should be extended in a natural position. Some set the plants in rows and some in hills. I have tried both ways. I shall hereafter plant in hills.

It is my opinion that after a piece of land is properly prepared and set to blackberries, it should be fertilized anew once in three years.

Pruning is very important. Success often depends upon timely and proper pruning. It is asserted that blackberry canes will not bear a temperature lower than 16° below zero. Perhaps many sorts will not, but many can be made hardy enough to stand the severest cold, of this latitude, at least, by *pruning*. Having attended to this properly, they need no further preparation for winter. The old canes may be cut out and burned any time after the fruit is off. Some say the sooner the better and quote the theory that a dying or dead branch is sustained with no less tax on the root than a live one. I have yet to learn that the time makes any difference as far as the vitality of the bush is concerned. I should certainly remove them before the leaves show themselves in spring. A curved knife with a handle three feet in length is very convenient for this purpose.

Where considerable quantities are raised for market, picking in a careful and economical manner is very important. There are various plans, but the main thing is to have a system of some sort and improvements will suggest themselves. Women are the best pickers. If children are employed they should be divided into squads of three or four, each squad under the charge of a reliable person. Each picker should receive a ticket as each basket is picked, if the

work is well done. If the berries have to be sorted, half tickets. Careless injury to the canes should be punished by discharge. The tickets should be cashed at night. Nothing has so good an effect upon employees as prompt, cheerful payment.

When your blackberries come into market, there are usually more or less wild ones; also pears, plums, peaches, &c., &c., in competition with your fruit, and when we consider that blackberries are comparatively perishable, it is seen that a near market is almost indispensable. I would not advise any one to attempt to raise them for sale who lived many miles from a city, unless they could avail themselves of rapid transit by rail. And even then there must be a special arrangement with some market man.

RASPBERRIES.

The cultivated raspberry, under proper conditions, is easy to be raised and is prolific. With me it is the most profitable of berries. I have one row six rods in length from which I have sold \$70 worth in four years. They have the advantage over the blackberry in this way: they come into market just as the strawberry is going out and before other fruits are plentiful. They are preferable to the native berry in several respects. They are firm and good keepers. They may be picked before they are quite ripe and will ripen up in the baskets. They will not crush together, neither will they drip juice from the basket. They are free from maggot's and spice bugs. It is asserted by some wise men that an insect has precisely the same flavor as what he feeds on, but one taste of a spice bug will refute that theory most effectually and emphatically.

Raspberries flourish best for me on a clay loam soil where there is good natural drainage. A stiff soil prevents the new canes from getting a good start in the spring. A location somewhat in the shade for a part of the day is advantageous. It is my opinion that those bushes which are fully exposed to the burning sun are more likely to rust. This is a disease of which I know but little. I have never had it injure my bushes except in one instance, to any extent. This was the last season, and as they were entirely without shade, I attributed it to that fact. I have had small patches in the garden affected, but of this I shall speak under another head. I consider a well-cultivated orchard to be a favorable place, as to shade—planted between the rows of apple trees. I think in open field culture that

by growing in thick rows or in quite thick bunches, they will shade themselves sufficiently. I get the most berries and the finest from single rows beside fences. The other advantages of thus planting are, protection from winds, snow lying on well, and economy of space. The disadvantages are, the presence of weeds and wild raspberry bushes, which are worse than weeds, and the danger of snow-drifts breaking down the canes as the snow melts away in spring. When I am about to put a row beside a fence I spread on a good coat of manure and turn furrows towards the fence, the first as near as possible. I plow five furrows in all; the outside furrow is cut up and spaded over between the first furrow and the fence. I then spread on more manure and harrow it thoroughly, and clear out the last furrow with a spade. This work is done in the fall. Early in the spring I plant my canes. As I raise them myself and have a plenty I put them in one straight row only one foot apart. If I bought the plants I presume I should put them three feet apart. By planting closely I get a strong hedge one year sooner, and consequently berries in proportion.

In the choice of variety there is but little need of experimenting. There are many kinds of red, besides the orange, the white and the black. The black caps are not a satisfactory market berry, nor are they the best for the family table. The same may be said of the orange and of the white. There is considerable difference in their flavor and some people prefer the one or the other. The orange has a strong rich aroma and a peculiar taste much relished by a few. The white has nothing particular to recommend it to my fancy except that it is ornamental when a few are mixed with the reds in baskets for sale or upon the table. I raise the reds exclusively, both for profit and for use. The weight of testimony in this State is in favor of the Turner for an early sort and the Cuthbert for a late sort. These are hardy, prolific and of good quality. It is hardly worth while to pay big prices for the fancy sorts which need so much puffing to make them sell.

I run the cultivator along about the twentieth of May, to stir up the weeds and again about five days after. I then sow dandelion seeds and hoe during the summer. Sometimes I plant beans instead of dandelions. Either gives me a paying crop the first year and the dandelions will pay better the second year than the first. Strawberry-berries will do first-rate also. Plant a late sort and the snow lying on will keep them back somewhat and you will be in the market after

others have withdrawn. In open field culture I plant in rows five feet apart. I put the plants one foot apart and let them multiply until I get quite a hedge. I prepare the ground as I would for blackberries. I usually plant beans, &c., on the same ground the first year. The crop often pays for the use of the land and care.

Raspberry canes need a support in the fruiting season. Without it the weight of berries and the foliage with the dew or rain causes them to fall to the ground where the fruit gets soiled and the later blossoms are blighted. They also need support in winter. Raspberry canes are weak and break down easily under weight of snow. Where but few are cultivated for home use it is easier to plant in hills and tie up each hill to a stake with wool twine or any other soft string, closely for wintering and loosely for the fruiting season. When planted on a larger scale and in the hedge-row system, I have tried a number of plans. I first used a line of wire on each side of the row. This is by far the cheapest support. I found that where the canes rested heavily upon the wire they were subject to rust. I have discarded that method on that account. I think the safest and best way is to nail small round poles to a line of stakes on each side of the row and tack laths across at intervals. I have this year a very strong growth of canes and have gathered them at the top into compact bunches and tied them with twine on a piece set one year ago last May, and not yet thickened up to a hedge. Most varieties of this berry, like the blackberry, throw up new canes from the root. The black cap is an exception and must be layered.

I presume it is understood by all that canes never bear but once, and of course upon the vigor and numbers of new canes produced in any one year, depends the next year's crop. The old canes should be removed. When to do this is a disputed point. The correct theory is to do it as soon as the fruit is off. Unless the new canes are very stocky and well supported, the old ones are a stay and support to them and for that reason I usually take them out after the snow is off in the spring. Like the blackberry, successful wintering and a good crop next year both depend very much upon the time and manner of pruning. No definite rule can be given to meet all circumstances. It depends upon the season, whether wet or dry; upon the situation, exposed or sheltered; upon the rapidity of their growth. I will say, however, that I should not allow them to grow over two feet high the year they were set. In succeeding years not over three and a half feet. Sometimes it is necessary to prune twice if the

growth has been very rapid and exuberant. Pruning is a simple matter, merely pinching the crowns of the new canes. I use hedge shears for the purpose, but pinching with the thumb and finger just enough to stop the upward growth is better for the canes, but cannot be done so rapidly. If after this they throw out side branches, these should not be allowed to grow more than a foot in length or even less.

Some varieties, notably the orange, are not hardy and to ensure wintering they should be bent down and covered lightly with earth or litter. If this be done one person should hold them down while another plies the spade until the earth will hold them.

Picking, &c., should be managed the same as with blackberries, and with a near market, the right kinds, honest measure, and an inviting appearance of your wares, you have nothing to fear from an abundance of native berries. I have sold large quantities for ten cents a basket when natives were a drug at six cents. In fact, I have never yet been obliged to sell for less than ten cents, although strong competition in cultivated berries would run down the price.

Evaporated raspberries are becoming a standard article of commerce. The supply is entirely inadequate for the demand. In New York State tons of them are prepared and sold every year (one man has ninety acres), yet they seldom if ever find their way into Maine, even as a novelty.

It is probable that the demand will grow faster than the supply increases for many years. Our State is well adapted to this business. In the first place the raspberry is natural to the latitude and especially so to the soil. It is a business in which our young people can engage. But a comparatively small area is needed. Ten acres or even five is sufficient land on which to carry on quite a large business. The plants to set one-eighth of an acre can be bought for a small sum of money, and from them in two years sufficient stock can be obtained to set five acres at least. This two years of waiting need not be lost, because that time is necessary to properly prepare the field for the plants. If judicious management be practiced, the crops for the two years will pay for all the labor of preparation, and for nearly all if not the whole of the manure. A good evaporator will cost but little more than a first-class mowing machine. There is no doubt but that a good article put on sale in an attractive package will make a market for itself. Not many years ago celery had a very limited sale, but as people have gradually become accustomed to its use, the consumption has rapidly increased, and it is now looked

upon almost as a necessity. If this be true of celery, what a vastly greater demand is certain to spring up for evaporated raspberries. Gregg's Black Cap is found to be the best for this purpose. It contains less water, and its color is favorable in many aspects. I have had no actual experience in this branch of fruit culture. I have been giving simply my opinion. I wish the business might be investigated, written up, talked up, and inaugurated in Maine, if there is any money in it.

STRAWBERRIES.

A friend of mine, a physician, has three hens. They are of a good breed, young, well fed, and well cared for. The gross returns which my friend receives from those hens are enormous when compared with the outlay. He knows just about as much about the poultry business as a science, as I know about the cerebro spinal meningitis, yet it is his real desire to give up his practice and enjoy an income of \$3,000 a year from 1,000 hens. If one doubts his ability to make that amount he will triumphantly call your attention to his three hens and what they are doing. The strawberry business is somewhat like the poultry business in this particular; it is very easy to do a small business, but the men or women are few who can make a pecuniary success of a large business in either line. I know a lady whose health required out-door work, who sold \$49.77 worth of strawberries in one year, from six square rods of land. Hers is not an exceptional case by any means. A showing even better may be made, under the best possible conditions and with the best possible care.

And this is the whole sum, science and philosophy of the matter of strawberry raising. My first attempts were the most successful, partly because I happened to start under favorable conditions as to soil, variety, &c.; mainly, because I gave them good cultivation. Since then I have scored several magnificent failures, and to-day I know less of strawberry culture, in my own estimation, than at any other period of my life. I can endorse Josh Billings, who said, "It is better for a man not to know quite so much, than it is to know so much that isn't so." There are so many points to be considered, so many problems to be solved, and so many successes on record, achieved under widely different culture, soil, climatic influences, &c., that nothing less than a strawberry growers' convention can grapple and elucidate all these matters. I can at best but briefly glance at a few points, and at the most what I have to say should be considered

simply as the opinion of one not competent to be deemed an authority.

One must not expect to succeed in this business without the aid of experience. Theory is good as far as it goes, but one's competitors are almost sure to have both. One must study and learn by the light of small ventures, afterwards a gradual extension may be profitable. It is well to take the first lesson from nature herself. Where wild berries grow abundantly it is safe to expect the cultivated to thrive. We will suppose we have such a piece of land in grass. I should mow before any seeds were formed. When plowed, I should want about six inches of the field turned exactly bottom side up. I should spread on a liberal dressing of manure, at least twenty cords to the acre. This should be well worked into the soil in the fall. In the spring, plant early sweet corn for the family, and between the hills set the strawberry plants, a sufficient number. Give thoroughly clean cultivation during the summer. Cut up the corn-stalks as soon and as fast as you use the corn. Do not try to keep the same plot in berries more than three years.

After getting started, plant a plot each year and plow up those that are getting weedy. This, of course, applies to those who have plenty of land. If one has but a garden there is nothing equal to the hoe, the hand weeder and elbow grease, for the weeds must be exterminated and you must fight it out on that line if it takes all summer and every summer.

That the cultivation of small fruits for market is a profitable business in the hands of an experienced culturist, there is no doubt. In our good State of Maine we have the natural home of them all. Nowhere are the bushes and the vines more fruitful. Nowhere does the summer paint the ripened fruit with so true a hand. Nowhere does her laboratory combine more exquisite flavors. I believe that our people may become pre-eminent in this department of pomology. But I will not lay undue stress on this. Rather would I urge upon all the ease and cheapness with which an abundance may be provided for the home table. I *know* by experience that blackberries and raspberries can be produced and picked for two and one-half cents per basket, and that as many bushels of strawberries as of potatoes can be raised on one square rod of land.

They are all luxuries, unquestionably and emphatically. We, in the country, have within our easy grasp what is hardly to be had in the city at any price, if we take into account freshness and perfection. The farmer owes it to himself and family that they have

the best and a plenty of what his soil will yield. As a class we are quite apt to feed the pocket at the expense of the stomach, the intellect, and the soul. Our farms offer too little that appeals to the taste and to the fancy. It is not the hard labor of the farms that drives our boys from home. They are ready to work harder in the city. Until our surroundings, plenty, variety, comforts, and all that tends to approximate the ideal and practical sum of rural happiness outweighs the novelties, allurements, fascinations, tinsel and glare of city life, this exodus will continue.

In urging the claims and desiderata of small fruit culture upon your attention, I feel that I am urging the taking of a step in the right direction.

An unprejudiced observer sees too many homesteads rich in ample domain and half-filled fields, too many circumscribed desires for beauty, too many tables bare of fruits and flowers, and has a sigh of pity for the poverty that pays such goodly taxes. Our homesteads all should be worthy of our valleys, of our mountains, of our people. We should center these things sweet to eye and ear, to soul and sense. Things that shall draw and hold the affections of both young and old, by tender ties which they shall never wish to break. The Maine State Pomological Society is doing wisely and well its appropriate work in hastening the advent of that perfect day. From the progress of the past it may find abundant hope for the present, and an earnest for the future.

Next on the programme was,

"WHAT MAN HATH DONE, MAN MAY DO."

By D. H. KNOWLTON.

For over fifty years my father spent his life on the old farm first settled by my grandfather. Here he erected buildings for a home. They were model farm buildings, and into the old substantial farmhouse the sun darted his rays of light and shone unobstructed by shade trees or shrub. When I was a small boy the old farm was sold and a new home on the main street of our pleasant village was purchased. In front of the house there were three large elms spreading out their graceful branches, but my father wanted as many trees as any one along the street and accordingly set out a tree in every available spot, so that in a few years there was a dense mass of foliage on every hand, and what little sunshine gained admission to the house

had a struggle for a passage through the shade trees. Just why it was my father after spending his earlier life in sunshine, so much desired the shade, I never knew.

Had it been in these later days I should think possibly he had been reading Dr. Loring's addresses on forestry, or studying the reports of the Agricultural Bureau upon the same subject. Here for twenty years or more I lived in perfect content. It was home to me and a good one, too, but as the years rolled on I became a husband and father. Feeble health of wife and child led to the formation of new plans; vacant lots were examined and the one upon which the sun shines from his rising in the morning till his setting behind the hills was selected as the site for our future home. Well, the next spring we were settled in a new house on a lot anything but promising for a fruit garden, and here, in the spring of 1879, properly begins the narrative of fruit culture I am about to offer for your consideration. I have given you this much in detail as a preface to my remarks, because in thinking over what I have accomplished in these few years my mind invariably goes back to the beginning and the causes which led to it. You will pardon me in the frequent use of the *ego* in this paper. It is so closely connected with all the work done I cannot help it, and because of this fact, it is my hope that to some, at least, this paper may prove the more helpful, for "What man hath done, man may do."

THE BEGINNING.

The acre of land of which I am to speak is on a hill-side overlooking the village and a beautiful river valley. To the north of it is a fine grove of deciduous and evergreen trees, while the general surface slopes gently with a southerly exposure. The soil for the most part is a rocky loam, but along the southerly edge it is boggy and wet. For half a century it had been a mowing field, half cleared of stones, and not to my knowledge had it been dressed for years. The grasshopper year, as we call it, a man attempted to cultivate a portion of it and gave it up in disgust. It produced little grass, in fact was run out. The ground was very stony and to this day I have not succeeded in clearing the soil so as to run a plow or even a hoe without frequently hitting stones.

The situation was this, in short, the upper portion was stony and dry, the lower portion was mucky and wet. Upon this land, years before, some one had set a few apple trees which had been browsed

by cattle and received no care, and were as scrubby as any pasture trees you ever saw. So far as apples were concerned we decided to buy no trees until we knew the varieties we wanted. The same was true in regard to the setting of scions. We knew we wanted a King Sweet, a Red Astrachan, a Deane, a Fameuse, a Winthrop Greening, and we also decided to set a Talman Sweet, a Black Oxford, and the rest in Baldwins, Rhode Island Greenings and Roxbury Russets. Several of the trees we decided not to graft the first season, hoping they might prove to be desirable fruit. Our object in view in this matter was to supply the family with fruit of good quality, for I must say we hadn't at that time the remotest idea of raising more apples than we could consume under our own roof. At the trees I went with my saw and knife and some of them looked lonesome and homely enough. A neighbor advised us to cut them down, but we concluded to prune closely to save life and not to destroy by uprooting. A portion of the land was plowed the first spring. Oh! how the stones stuck out along the uneven furrows, and when the horses got down to the lower part they sank down deep into muck. The stones, however, proved to be just what I needed, for I began to collect them in heaps and then to wheel them to the wet land where the muck was dug out, the stones thrown in, and outlets made to the roadside drain to carry off the standing water. This method I have continued since till all the wet and boggy soil became arable, and it is now the most fertile portion of the garden. The first spring I set, also, a few strawberry plants of an unknown variety, and started cuttings of currants and grapes. I was fortunate enough to secure some very good bushes of Houghton Seedling gooseberries, though at the same time I was unfortunate, as all are likely to be in buying fruit trees, for several of them when fruiting the second year proved to be natives and had to be dug up. Other than the ordinary cultivation of vegetables with which the garden was planted this represents the first season's struggles. The results, however, were notable, for the apple trees with the new culture they were receiving began to grow vigorously, and one or two even had the courage to blossom and bear some specimens of fruit. One of these I must speak of here, for I know of no autumn fruit that has more excellent qualities for family use. I refer to the Munson Sweet, an apple that is good to cook early, and may be served in a variety of ways very acceptably and when ripe is an excellent dessert apple. It deserves a place in every family fruit garden.

THE SECOND YEAR'S WORK.

The second year more scions were set, but only one new variety and that the Cole's Quince, or rather a local variety of special merit, originated by Capt. William Russell of our town some fifty years ago. A few New York trees were bought of a neighbor who had set them too thick on his lot several years before. They were bought for Northern Spy, but all with one exception proved to be Ben Davis and the exception was a Pewaukee. The Ben Davis bore the next season and have continued to bear each year since, rather more of that variety than we could consume in the family. Last year, however, I sold the surplus for \$1.40 per bushel, and this year I find they are now worth 25 or 50 cents more to the barrel than Baldwins or Roxbury Russets. From this outlook I shall not re-graft the trees at present. The currant suckers, having taken root, were set in rows and made a fine growth, but were not large enough to bear. The gooseberries, however, did bear some, enough for me to discover the natives. Several pear trees of selected varieties were set and all grew well during the season. Small beds of strawberries were set, Charles Downing and Crescent Seedling, which made a fine growth. Blackberries of an unknown variety were set with great hopes. These made a splendid growth, but the winter killed them back nearly to the roots and the second season the same process was repeated. They never produced any good fruit and were dug up. Clarke raspberry bushes from stock that had been growing in the vicinity for several years were set and from these the next year we got some fruit, just taste enough for us to want more. The third year they bore quite a good lot and we decided we could raise them. Several grape vines were set and grew well. There was also set an unknown variety of black caps, which the second year began to bear some. The fruits of the second year were strawberries, a very few gooseberries, and more apples than the first year.

OPERATIONS THE THIRD YEAR.

The third spring more scions were set, especially in the trees grafted the two previous springs, so that in some cases the trees were entirely grafted. More grape vines were set from cuttings of the Delaware, which were rooted the year before. Strawberries were also set for next year's fruit and the soil generally well cultivated. A few cherries, a pomegranate, Russian Mulberry and one

or two plums were also set out. Of the Russian Mulberry, I may be permitted to say a word, since so many of our nurserymen are widely advertising it, and every tree agent you meet urges you to buy it. It has made a slow growth and at the present time is not more than four feet in height, and I have given it a good chance to establish a reputation. It grows slowly and after several years of cultivation has borne no fruit. From my own experience and what I read of it, it is of no earthly value in Maine. It was sold by Purdy's announcement and I cannot refrain from urging others in Maine to let the Mennonites raise the mulberries. The fruit crop this year began with strawberries, of which we had quite a surplus after eating an abundance ourselves. There was a small bed of Downings, as beautiful a sight as I ever saw in any fruit garden. As a curiosity the product of this bed was carefully measured and it was found to produce fine berries at the rate of two hundred bushels to the acre. The apple trees bore more than the year before. The currants and gooseberries also produced fruit and we had all we needed of both. For several weeks in small amounts we had most excellent raspberries, though not as many as we wanted. There were also a few black caps, which for the lack of better berries seemed very good.

THE FOURTH YEAR AND ITS FRUITS.

The fourth spring more work was done upon the apple trees, a few being grafted and a few new trees being set. We were now ready to try some more raspberries and blackberries; of course we kept up our strawberry beds, for we couldn't do without them after the family had enjoyed them for two years. We ransacked the books, catalogues and papers to learn the hardy varieties, and of black caps in the spring we set both Gregg and Souhegan, as well as some Early Harvest blackberries. Early in the autumn we cleared a strip wide enough for four rows of bushes on the easterly side of our lot, a little less than fourteen rods long. The ground was well manured, thoroughly plowed and harrowed. Here we set one hundred bushes each, of Turner and Cuthbert raspberries and Snyder blackberry. These varieties were selected for earliness and hardiness, two very essential qualities in producing the fruit successfully. They were set as early in the fall as the stock could be obtained from a New Jersey nursery. People as they drove by wondered what I was doing there in the fall. I remember telling one man I was getting ready to plant beans, which was not very far from the truth, for I raised two crops of beans among the bushes the

next two years. I didn't wish to know his opinion had he been told I was setting raspberry and blackberry bushes in October. Even my own family were skeptical, but now they all admire and enjoy that beautiful hedge of fruitful shrubbery.

This year we had two or three barrels of apples, a surplus of strawberries, currants and gooseberries, some fine samples of grapes, and a few pears. There were also picked from my old raspberry bushes some excellent berries, which with Jersey cream made just the sort of relish we all enjoyed, in fact it was so popular there were no berries to sell.

THE FIFTH YEAR'S FRUITS.

The next season's work was similar in its nature. The scrubby apple trees upon which we commenced five years previous were growing rapidly, and fine thrifty trees with well-shaped tops were the result. Several grape vines were set, Brighton, Moore's Early and Virgennes. The shrubbery of all kinds was doing finely. The raspberries and blackberries set the fall before wintered well and started early in the spring, and during the season made a fine growth, though I did not allow any of them to grow more than two feet and at that not more than three or four canes to the plant. I had a few strong Downing strawberry plants. These were carefully set early in the spring and bore before the season ended some very fine fruit. My experience, however, has taught me that for garden culture, at any rate, there is more profit in setting the plants as early in August as they can be obtained, and I have lately followed this plan with success. A crop of peas or early beans may be grown from the same land and the following season the vines under favorable conditions will bear a good fair crop of berries.

This year we had apples the entire year, a surplus of strawberries, currants and gooseberries, which found a ready market. There were also enough raspberries for the family and a few Snyder blackberries from bushes of which we have made no mention. There was also quite a lot of grapes, some pears, and promise of still more fruit the next year.

HOW THE FRUIT CAME IN THE SIXTH YEAR.

The sixth year very few additions were made, though here and there a bush, tree or plant was set out. There was in fact no need of it except to keep up the strawberry beds. This we did by setting plants in the summer as soon as the new plants were of sufficient size.

There were several barrels of apples and all the other fruit needed in the family. The raspberry and blackberry bushes passed the second winter finely and before the season was through formed four compact rows of shrubs as fine as one could wish or expect under the most favorable circumstances.

SMALL FRUITS FOR THIRTEEN WEEKS.

We come now to the seventh and last year of which I shall speak. These details must be wearying to you, but other than some of the discouragements of which I propose to say a word or two later, they portray the work of fruit growing in a one-acre garden. This year was the most fruitful we had had because vines, shrubs and trees were in the best condition for fruit. The first strawberries were gathered the 25th day of June, and from that day to the 20th of September there was not a single day when small fruits of some kind were not abundant in our garden; and permit me to say here that twelve or thirteen weeks' time is none too long for the enjoyment of these luscious fruits. The apples, of which there were about a dozen barrels, will cover the year finely. The great triumph of the season, however, was the magnificent crop of raspberries and blackberries. Early in the season the Turners began to bloom, then the Clarkes and Cuthberts, and shortly the Snyder blackberries were a mass of snowy whiteness, surpassing in modest beauty the most gaudy flower beds. As the season advanced they were marvels to behold, and an astonishment to all who examined them. From tip to base of canes every available bud was utilized by the berry clusters. Loaded down as they were from the first they matured an abundant crop of fruit, which in quality was of unsurpassed excellence. While the raspberries, commencing with the Turners, ripened far more fruit than any of us had ever anticipated. There was no longer questioning by the passers-by as to what these bushes were, or whether they were expected to bear fruit; they bore their own testimony so that all could see and learn the lesson they taught me, which is that these fruits may be successfully grown in Maine.

During each year the garden produced all the vegetables used by our family, with the exception of potatoes, while the fruit trees seemed to grow all the better for the culture.

PLEASURE AND PROFIT IN FRUIT CULTURE.

At first and even to this day having in mind only the pleasures of cultivation and an abundance of fruit for the family, the work of fruit culture has been carried on from year to year. So responsive are all the fruits to good cultivation that during the past few years there has been a liberal surplus for sale, which kept the sugar barrel filled and increased the children's bank accounts. We have been surprised all the way along to note how quickly one may raise an abundance of fruits for home use, and when your genial Secretary very kindly invited me to prepare a paper for this occasion, I did not hesitate, for I knew that a simple recital of seven years' work would be an easy matter and, best of all, might prove helpful to hundreds of others who are ready and eager to raise fruits for the home, if only the difficulties are not too great. Engaged as I am in business, where every moment of time is valuable, where there is a constant strain upon the nerves, all my thoughts are at work, I stole away the time necessary to carry on my garden, doing with my own hands the larger part of the labor, and to-day I stand before you here in perfect health and strength, knowing that without my garden recreation many of my business duties would have to be laid aside and possibly myself a prematurely old young man. Then, again, working in the open air, cultivating flowers and fruit, my family are in better health than seven years ago, knowing, thank God, that our health and strength have been improved by living in His sunshine and feasting upon the good things He has so wisely placed within the reach of every man who controls a few rods of land in this good old State of Maine.

FOUR ESSENTIALS IN MAINE FRUIT CULTURE.

Before closing I wish to summarize what in detail I have spread out before you. The *essentials* of fruit culture in Maine are not very many and are within the control of most.

First. Any location where corn or potatoes will do well will produce fruits. Our own notion is, however, that the location should be near the house and, if possible, where the wind will neither blow the snow off nor pile it up in drifts. If the soil happens to be wet it must be well drained, when the results are likely to be just as good.

Second. It makes very much difference what kind of culture the soil receives. There is really very little danger of making the soil too rich by dressing liberally with barn-yard manure, so far as possible

working it thoroughly into the soil. If, however, there are fertilizing elements that are particularly called for in fruit culture they may be found in bone meal and wood ashes. When these are properly applied to most soil we doubt if very much more is needed to insure all the nature of the plant, tree or shrub may call for. But cultivate thoroughly if the best results are desired.

Third. It takes a long while for us to learn from our own experience that we can not accept as authority in fruit matters in Maine writers and fruit growers whose experiences are wholly in other States. It is therefore important, in fact, essential to fruit growing in any part of Maine that we have the best varieties, not perhaps the most talked of, but those that are hardy enough to endure our climate and early enough to be out of the way of frosts in the fall. One of the most profitable grapes for New York State is the Concord. I had two fine vines but I cut them both to the ground last fall, and in future will have no vines that do not mature their fruit earlier than the Concord. A glowing account of the excellent qualities of the Early Harvest blackberry induced me to try a few bushes. Twice in succession they have been killed to the ground and next spring they will come up root and branch and be "cremated" in the annual bonfire.

The *last essential* of which I will speak is pruning, for very much of success depends upon the skill and certainty with which it is done. Pruning will supply nothing to the soil or plant, but unless the plant growth be controlled or directed we shall not accomplish the objects sought. The plant will be less hardy and the fruit of inferior quality, but direct the energies of the plant by pruning to the production of fruit and if there be food enough within its reach you may count on a delicacy of flavor equal to fruit grown in any section of the country, while in quantity the fruit will be limited only by the capacity of the plant. Let the strawberry runners grow and you will have a dense mass of foliage and imperfectly formed fruit of inferior quality. Let the blackberry and raspberry bushes grow at random and ten to one the cold will kill them back, and if there happens to be fruit it will be of irregular form and inferior flavor.

POSSIBILITIES OF FRUIT CULTURE.

Having spoken thus of the necessities I will now call your attention to the possibilities of fruit culture, showing what in the writer's experience may be done by any one here in Maine in a few years—in other words, formulate what any farmer or gardener may expect

from fruit growing in the way of product each year—and for this purpose I will commence with the fruit that requires the least time.

The Strawberry. If one is fortunate enough to get strong, local-grown plants in the spring they will produce some berries the same season, though the rule is, the following season will be the most productive, and having once started a bed there is no need of ever being without the delicious fruit. By using potted plants in late summer a fair crop may be raised in ten months and a good crop from same vines the next year.

Raspberries and Blackberries will require two years growth before they will produce very much fruit, after which crops may be expected for five or six years and perhaps longer.

Currants and Gooseberries grow rapidly, and when good, strong roots are used will bear some the third year—and for years after. When cuttings are used it requires two or three years more.

Cherries and Plums are not likely to bear much under four or five years, and I imagine it is more likely to be more than less.

Pears I do not know very much about, though dwarf trees of some varieties will bear in three or four years, but if the trees are standard it will take a year or two longer, in some cases ten or a dozen years and sometimes more.

Grapes, when good, strong vines are set, will begin to bear the second year, and after the third and fourth years will usually bear quite heavily.

Apples. In my own case scions commenced bearing the third year, so did some very small apple trees, though they are the much abused Ben Davis. We cannot expect much from grafts of our own setting in less than five years, while from trees set the time of bearing will vary much in the different varieties, but with good stock and good culture apples may be expected in from five to ten years.

The possibilities assure us then as we have shown that in from one year to ten, any man may have a succession of large and small fruits in abundance for home use, and, if he chooses, a surplus for market. Under these circumstances it seems an inexcusable neglect that so few of our farmers permit themselves and their families to be deprived of all or even a part of these health-giving luxuries. In my opinion they cost less than drugs and are vastly more beneficial.

DIFFICULTIES OF FRUIT CULTURE.

Perhaps you may infer from what I have read you that there have been no obstacles in the way of fruit growing on my acre lot, but I can assure you there have been a great many. The sunny hill-sides protected from the cold north winds suggests to the passer by that the location is splendid. But because of its favorable position hordes of insect pests seem to gather there from miles around. The curculios have taken all my plums thus far, the borers have killed several of my apple trees, the currant worms have made their presence known not only in the springtime but all through the summer, the codlin moth knows where every one of my apple trees is and they seem to enjoy leaving their hidden retreats when I am slumbering and when the fruit falls from the tree, I find the evidence of their mischief within the core; the *Trypeta pomonella* tunnels its way through my best sweet apples and early fruit, the white grub worm beneath the surface eats away at the roots of the strawberry plants, and the first intimation I have of his presence is the death of the plant. The robins have eaten my cherries and something kills my pear trees. Don't for a moment allow yourselves to think success in fruit growing is assured to any one without labor and constant care, but the fruit more than pays us for our labor in the pleasure and health it gives. I always thought Farmington was an exceptionally good and virtuous town, and I am happy to say that during my seven years of fruit growing to our knowledge nothing has ever been stolen from the garden. In other places many have suffered from thieves and lost their best fruit. The boys know where my garden is, they know it contains fruit when there is fruit anywhere; there are no watch-dogs about the premises, neither is the lot surrounded by a "spiked fence," the children, too, know, for many of them visit us and play around among the flowers and fruits, but somehow, for some reason I know not, unless it be in the general excellence of their moral training, they have honored our possessions and permitted us to enjoy the fruits of our labor.

One of the most delightful books I ever read is Warner's "My Summer in a Garden," and thinking you may enjoy some variation from my monotonous notion of fruit growing, I will read, in closing, a few paragraphs of *his* experience.

"There would be no thieves if there was nothing to steal; and I suppose in the thieves' catechism the provider is as bad as the thief; and probably I am to blame for leaving out a few winter pears, which some predatory boy carried off on Sunday. At first I was angry, and said I would like to

have caught the urchin in the act; but, on second thought, I was glad I did not. The interview would not have been pleasant. I shouldn't have known what to do with him. The chances are that he would have escaped away with his pockets full, and giped at me from a safe distance. And if I had got my hands on him, I should have been still more embarrassed. If I had flogged him, he would have got over it a good deal sooner than I should. That sort of boy does not mind castigation any more than he does tearing his trousers on the briars. * * *

"I found a man once in my raspberry bushes, early in the season, when we were waiting for a dishful to ripen. Upon inquiring what he was about, he said he was only eating some; and the operation seemed to be so natural and simple that I disliked to disturb him. And I am not very sure that one has a right to the whole of an abundant crop of fruit until he has gathered it. * * *

"A child is curious all over, and his curiosity is excited about as early as his hunger. * * * Perhaps this fact has no practical relation to gardening; but it occurs to me that, if I should paper the outside of my high board fence with the leaves of the Arabian Nights, it would afford me a good deal of protection,—more, in fact, than spikes in the top, which tear trousers and encourage profanity, but do not save fruit. A spiked fence is a challenge to any boy of spirit. But if the fence were papered with fairy tales, would he not stop to read them until too late for him to climb into the garden? I don't know. Human nature is vicious. The boy might regard the picture of the garden of Hesperides only as an advertisement of what was over the fence. I begin to find that the problem of raising fruit is nothing to that of getting it after it has matured. So long as the law, just in many respects, is in force against shooting birds and small boys, the gardener may sow in tears and reap in vain.

** "You buy and set out a choice pear tree.* * At length it rewards your care by producing two or three pears, which you cut up and divide in the family, declaring the flavor of the bit you eat to be something extraordinary. The next year the little tree blossoms full, and sets well, and in the autumn has on its slender, drooping limbs half a bushel of fruit, daily growing more delicious in the sun. You show it to your friends, reading to them the French name, which you can never remember, on the label; you take an honest pride in the successful fruit of long care. That night your pears shall be required of you by a boy! Along comes an irresponsible urchin, who has not been growing much longer than the tree, with not twenty-five cents' worth of clothing on him, and in five minutes takes off every pear, and retires into safe obscurity.* * * The boy goes on his way—to Congress or the State Prison, in either place he will be accused of stealing, perhaps wrongfully. You learn, in time, that it is better to have had pears and lost them than not to have pears at all. You come to know that the least (rarest) part of the pleasure of raising fruit is the vulgar eating it. You recall your delight in conversing with the nurseryman, in looking at his illustrated catalogues, where all the pears are

drawn perfect in form and of extra size, and at that exact moment between ripeness and decay which it is so impossible to hit in practice. Fruit cannot be raised on this earth to taste as you imagine those pears would taste. How you watch the tender twigs in spring, and the freshly-forming bark, hovering about the healthy young tree with your pruning knife many a sunny morning. That is happiness! Then, if you know it, you are drinking the very wine of life; and when the sweet juices of the earth mount the limbs, and flow down the tender stem, ripening and reddening the pendent fruit, you feel that you somehow stand at the source of things, and have no unimportant share in the processes of nature. Enter at this moment boy the destroyer, whose office is that of preserver as well; for, though he removes the fruit from your sight, it remains in your memory immortally ripe and desirable."

AFTERNOON SESSION.

The meeting was called to order at 1.30 o'clock, President Pope in the chair. Mr. W. P. Atherton was introduced, who read the following essay.

THE CLIMATIC LINE OF FRUIT CULTURE IN MAINE.

By WILLIAM P. ATHERTON.

What is climate? What is climatic influence, and is there any climatic line to fruit culture in Maine? In the discussion of this subject I shall not go into the origin of species. If, however, I should be asked, "what determines a variety, climate or soil?" I should say neither; they are determined by a higher law and these are but accessaries to modify or develop the species itself. We know that the earth is continually changing, that some forms of flora that once existed exist no longer because the conditions necessary to their life and growth are wanting. Still, much of the magnificent flora which graced this continent lies buried in our mines in a condensed combustible form which gives warmth to our dwellings, speed to our engines and whirls a million spindles.

But the question is, What is climate? I answer, it is the condition or state of the atmosphere in which we live as regards heat and cold, moisture and dryness and the amount and durability of the same. In England we say they have a moist climate because of the surrounding seas, the ocean currents and the frequent and long-continued fogs. Here in Maine we have a colder, dryer and more changeable climate, due, perhaps, not so much to the elevation and depression

of the land as to the vast bodies of ice constantly floating near to our northeastern coast, and to the steady cold northwestern winds. In Florida they have a more equable climate, except in rare instances like the present winter when the thermometer runs down to almost zero, freezing oranges on the trees and the ground to the depth of eight or ten inches. What is climatic influence? I answer, it is that state of the atmosphere which develops and modifies the life and growth of a plant, gives character or want of character to its fruit and determines its durability. This being the case, it is perfectly natural and reasonable to suppose that a plant, animal, or that man himself would thrive best in that climate or country in which they originated. Climatic influence is that state of the atmosphere which makes the Baldwin apple in the coast towns of Maine less in size and somewhat wanting in color and flavor of the same apple raised in the interior or central portions of the State; it is that influence which makes the Baldwin in some portions of Piscataquis County a hard, sour cooking apple, in some parts of Washington County a medium-sized, insipid and greenish colored apple, in Kennebec, Franklin, Androscoggin, Cumberland and a few other counties a large-sized and beautifully colored fruit and nice to eat when you can obtain nothing better; it is that influence which makes the same apple raised in Massachusetts a little earlier and softer in texture, in Western New York a still larger and richer colored fruit and in central Illinois nothing but a fall apple. I am aware that I am treading on dangerous ground and that the facts will not always bear out the above statement, that the same results are frequently due to soil composition and soil conditions, but the general law holds good that climate marks a broader and a deeper influence on a variety than soil.

But I must come directly to the subject matter under discussion, viz:—the climatic line of fruit culture in Maine. Is this an absurd question? Has it been demonstrated beyond doubt that there are limits to fruit culture in Maine? If so, where? Can we draw a line anywhere in our State and say to fruit culture “thus far canst thou go and no farther?” If such a line can be drawn, who is bold enough to execute it, and where can he commence and where end? There is a prevailing opinion that the 45th degree of latitude is about the average northern limit to successful fruit culture in Maine, and this opinion is founded on our present knowledge of and our present development of the business. The facts will bear me out in saying

that this line is the northern limit to successful fruit culture as at present developed, varied of course by the positions of the northern counties and the elevation of the land above the sea level.

The 45th degree of latitude runs through the lower portion of No. 4, Oxford County, just grazing the northern boundary of Lake Umbagog; in Franklin County through the northern portion of Rangeley, Dallas, centre of Plantation No. 1, and the northern portion of Mt. Abraham Township and Kingfield; in Somerset County through Lexington, Concord, Bingham, Brighton, Harmony and Ripley; in Penobscot County through Dexter, Garland, Charleston, Corinth, Hudson, Alton and Argyle, where it strikes the Penobscot River about fourteen and a half miles above Bangor; then crossing through Milford and Greenfield it strikes and passes through the upper unsettled portion of Hancock County, and thence on through unsettled portions of Washington County when it passes through Crawford, Cooper, Meddybemps, Charlotte, Pembroke, and winds up on the eastern border in Perry. Now a large part of Washington County is but a howling wilderness, the settled portions including those towns bordering on the Atlantic, Passamaquoddy Bay and the St. Croix River.

In Charlotte the Baldwin is grown to only a limited extent, while nearly every other variety known to pomologists is successfully grown with the exception of Williams' Favorite, King Sweeting, Primate, King and Porter, which are considered tender. Pears also succeed well, being tardy only in bearing. Some orchardists have tried the Baldwin to the extent of half a dozen trees or more and some pronounce it a good bearer while others call it a poor bearer. The experience of Mr. Henry A. Sprague has been that young trees bear but thinly, owing, as he thinks, to winter killing of the buds.

I wish to say in this connection, that fruit is successfully grown seventy-five miles north of Charlotte in Aroostook County at Houlton, ten miles north of 46 degrees latitude. Furthermore, that when Washington County becomes more settled and the farmers turn their attention more directly to agriculture and less to lumbering and fishing, there will be no climatic reason why fruit culture may not be a successful business in any portion thereof.

In Hancock County fruit culture is not pursued to any extent to which it is in counties west of the Penobscot. In favorable seasons they raise a small surplus for export but occasionally not enough for

home consumption, when winter apples have to be brought from Boston. The climate, too, affects the fruit in the coast towns. On account of much damp and foggy weather the fruit in general is less highly colored and wanting in acidity or flavor. The same may be said also of the fruit in Knox and Lincoln. The Baldwin is the leading variety grown in Hancock County and there is no portion of her territory where fruit may not be successfully grown when proper attention is given to the subject.

Crossing over into Penobscot County, the northerly limit of fruit culture at present seems to be in the towns of Bradford, Charleston, Garland and Dexter, about eighteen to twenty miles north of Bangor. Fair specimens of the Baldwin and Greening are grown in these towns according to a statement made to me recently in a private letter by S. C. Harlow, one of the most intelligent and successful pomologists of Bangor. He calls these the northerly tier of towns in the county. In reality, they are below the middle of the county. He means simply that they are the northerly towns which are much populated or cultivated. If you go up into the centre of Patten, sixty miles farther north, you are then twenty miles below the northerly limit of the county, and if apples and other fruits can be successfully grown in Houlton, ten miles farther north than Patten, what is to prevent their being grown in Patten, or Stacyville, or in Mount Chase even? Nothing, of course, so far as climate or soil is concerned. The only drawback now is distance from railroad communication and the comparatively unsettled state of the country. Fifty years from now will make a great change and mark great progress in fruit culture.

I might go on with a similar statement of facts and a similar course of reasoning for Piscataquis, Somerset and Franklin counties, but it would take up too much time and not be specially profitable. I will say, however, that successful fruit culture has progressed farther north in Piscataquis than in any other county, with the exception of Aroostook. In Franklin County successful fruit culture has not progressed much farther north than Farmington, Temple and Weld. In New Vineyard, Strong, Freeman and Phillips the business is in that experimental condition where great uncertainty and great anxiety prevails in the introduction of those varieties which succeed well farther south, except in specially favored localities. In towns farther north, say in Salem, Kingfield and Madrid, fruit culture is in that condition it was in fifty years ago in Farmington. For this latter state-

ment I am indebted to Mr. S. R. Leland, the well-known pomologist of Mt. Baldwin Farm, in Farmington.

You may not find as many climatic changes in Franklin as in Oxford, but you will find some quite as severe. When a man's entire yearly product of fruit, amounting to four or five hundred dollars, is destroyed in a night from one October freeze, or thousands of grafts from one to four years of age of several standard varieties are killed back to the parent stock in one winter, he is strongly inclined to mark his position as the climatic line of fruit culture. But it only goes to prove that he was unfortunate in the position of the orchard and in the selection of the varieties. Select the proper varieties, engraft them on hardy, well-tested stock, plant the trees in soil suited to their growth, shelter them with evergreen or other forest trees, and I will venture to say that you have removed the climatic line in the course of fifty years—so far, at least, as your own position is concerned—one-half a degree farther north. We know that lightning seldom strikes twice in the same place and the records of the past will go to show that a freeze like that which utterly destroyed the fruit crop in Phillips and in adjacent towns five years ago, or like the freeze which within a few months past destroyed a large part of the orange crop in Florida and ruined many young trees, will not occur again for forty or fifty years. The orchardists in Florida are full of hope and courage, and the same persevering and indomitable spirit should pervade all our frontier or pioneer fruit culturists.

The climatic line of fruit culture in Maine is all moonshine. That staunch pioneer and venerable pomologist, Mr. Calvin Chamberlin of Foxcroft, has recently declared to me in a private letter that the subject will do very well to talk about, but that it will be a good deal like chasing the rainbow: it will be a great deal nearer to some than to others.

We all know that the thermal line of fruit culture varies greatly in one's own town. In riding the short distance of two miles, from my place to Hallowell, we cross a comparatively low valley where the thermometer on a cold winter's day or on a warm July night is always from five to ten degrees lower than what it is near the top of the hill, some sixty to seventy feet in elevation.

Now I cannot remember, but Dr. Hoskins of Newport, Vermont, will tell you just how many degrees difference there will be in the thermometer for every fifty or one hundred feet difference in eleva-

tion, and he will tell you just what the probable effect would be upon fruit culture for every ten or fifteen degrees of yearly average difference. It is not the sudden and short-lived dropping of the thermometer to thirty or forty degrees below zero that seriously affects fruit culture—we frequently have that in Kennebec County—but it is the shorter average season and the steady average of cold below zero. I am confident that, while I can make fruit culture successful in my present location, I could not do as well a mile away in the valley, not so much because of a difference in soil as the difference in temperature. And if such be the case here with me, what must it not be in many parts of Oxford and in Franklin counties? Now, if I was on the top of Mt. Abram, it would not take me long to decide whether a Baldwin or one of Dr. Hoskins' Iron-Clads would grow there. I should know they would not; neither would they grow and be productive down in the village of Salem, in the valley; but I would clear a nice little spot one-third of the way up on the eastern side, having the forest on the north and west as a protection, and there plant a Baldwin and expect it to grow; no, I will not joke, I should plant a small orchard of such varieties as had been tested for a like latitude.

How is it in Aroostook County? I learn from Mr. E. W. Merritt of Houlton, who has canvassed the State pretty thoroughly, that, while detached positions in some of the more northerly towns of the county, such as Mars Hill, Mapleton, Castle Hill, Perham, and even as far north as New Sweden, are favorable to fruit culture of certain varieties for home use, it is impossible at present to make the business profitable. He considers fourteen miles above Houlton as about the northerly limit to fruit culture in Aroostook County. He says there are places in Houlton where it would be impossible to make a tree grow, and other places where all that you have to do is to set out your tree and it will grow and thrive if protected from cattle and mice. Furthermore, that the whole towns of Linneus and Hodgdon, with parts of Littleton and Monticello, are of this character and also large portions of the county west and south of Houlton. The leading varieties in Aroostook County are Tetofsky, Red Astrachan, New Brunswick, Duchess, Alexander, Fameuse, Wealthy, and Blue Pearmain, and these, after a thorough trial, are considered reliable and profitable. Other varieties raised and which have proved good and hardy, though not taking the lead yet, are Summer Harvey, Sops of Wine, Williams' Favorite, Canada Baldwin, Haas, McIntosh Red,

Golden Pippin, Bloom, Alterton, Gideon and Magog. The Wealthy has proved, so far, hardy, productive, and a good keeper. But above all and beyond all, Mr. Merritt considers the New Brunswicker without a peer.

From this hasty glance over the State we find that fruit culture has its present limit at or near the 45th degree of latitude in Franklin and Somerset counties; in Piscataquis, about twenty miles farther north; in Penobscot, on or just below the line; in Hancock County, twenty miles farther south; in Washington, near the line, and in Aroostook as high up as 46 degrees 24 minutes. Fruit is actually raised in Aroostook, in a small way, 110 miles higher up than in Franklin; in fact, if you should travel that distance north of Rangeley it would carry you out of the county and a long way into Canada. Now, what does this line, which varies so greatly, go to show? Certainly not the climatic line of fruit culture. It only marks the present progress of the business as determined by population, cultivation of the land and the interest manifested in this branch of agriculture. I wish to say, in closing, that no man in or out of the State has done more to advance the cause of fruit culture in our northern counties than Dr. Hoskins of Newport, Vermont. Aroostook County, in particular, is indebted to him for many valuable varieties, and these varieties could not be obtained and tested without patient investigation and long and careful experiments. Perhaps he, or some one equally as diligent, will yet discover the apple which for Aroostook and our other northern counties shall take the place of the Baldwin in Kennebec and other southern and central counties, and then we shall have no climatic line.

In the absence of the writer, Mr. Atkins' paper, which was next on the programme, was read by Hon. Rufus Prince.

THE MULCH QUESTION.

By CHAS. G. ATKINS.

Next to the fertilizing of the soil, there is no practice more generally approved or urged with greater emphasis by those assuming to advise about the formation of plantations of fruit trees than that of mulching. I do not remember ever to have heard a dissenting voice from this general verdict, that a newly planted tree or shrub should have a good coat of mulch spread about it. When, however, it comes to the continuance of the practice during the successive

stages of the youth, manhood and old age of the orchard, we find no such accord. The most of our counsellors, some on one plea and some on another, advise us to discontinue the practice after a few years, and I doubt whether a single member of this society or of this assemblage will seriously advocate the mulching of a grown orchard on the same scale that is applied to newly planted trees, that is, so as to cover all the roots, which in a bearing orchard, even a comparatively young one, would amount to mulching the entire surface. That is something that once seemed to me unquestionably advisable, and I wish that I could now feel the same confidence, for it is much more satisfactory to write an essay when one feels that he has only solid ground under his feet, firm convictions to back up some positive advice, than when one sits astride the fence of indecision.

Like most points in farm or garden practice, there are many if's and and's to the mulch question, and to clear the way for a proper consideration of the most important, let us make a list of the advantages and disadvantages, allowed or alleged, of the practice.

Among the advantages of mulching I would enumerate the following: (1), protection of the surface soil from excessive drying; (2), the protection from sudden changes of temperature and therefore from alternate freezing and thawing in absence of snow in the cold season; (3), the prevention of the encrusting of the surface or of washing by rains, to which some tilled lands would be subject; (4), prevention of weeds; (5), securing to the roots undisturbed possession of the surface soil; (6), the promotion of nitrification and perhaps of other chemical changes in the constituents of the soil which render them more available for food for the trees; (7), the addition of fertilizing materials to the soil.

The objections may be marshalled thus: (1), to mulch a grown orchard thoroughly is expensive; (2), the mulch harbors insects and mice; (3), there is danger of fire sweeping through the orchard and destroying the trees; (4), the discontinuance of mulching after it has been long employed gives the trees a serious set back.

The limits which I have proposed to myself for this paper will not admit the consideration of all the specifications enumerated above, even were they matters of dispute. I will therefore ask attention to a few of the points involved.

The possession of the surface soil as a feeding ground seems to be a matter of great importance, when we consider the greatly superior fertility of that part of the soil. The first three inches may

be termed the cream and the lower layers the milk, which is effectually skimmed when we allow any other vegetation to take possession of the cream, or by frequent cultivation prevent the roots of the trees forming in it. A mulch not only keeps down other vegetation but prevents the soil getting too dry to yield its manurial substances to the trees.

The fertilizing properties of a mulch have not, I think, generally received due attention. Any kind of vegetable matter contains fertilizing ingredients which are made available by their digestion by animals; but this is not an indispensable process, for if spread on the ground, exposed to moisture and the ordinary heat of the air, they will decay and then yield all their ingredients, in just as available form. A ton of clover hay fed to animals adds to the manure heap, if both solids and liquids are saved, about seven dollars' worth of nitrogen, phosphoric acid and potash. Spread on the ground it will yield twenty-five per cent more, or about nine dollars' worth, and there will be no such loss as occurs in most barns, where thirty or forty per cent of the value is lost by escape of the liquids. A ton of Timothy hay is worth some seven dollars in the same way. Straw is worth about three dollars. Now let it be remembered that these are the contributions of the several ingredients to the fertility of the soil in addition to whatever effect they may have by their direct action as a mulch, which, it seems to me, we may fairly estimate at not less than two or three dollars. This would make wheat straw worth five or six dollars per ton for our purpose, Timothy, nine or ten, and clover eleven or twelve dollars. Swale hay has a pretty high manurial value; indeed, the analyses just now accessible to me rank it so high that I dare not use them as a basis for computation. Doubtless some one will wonder what clover and Timothy have to do with the mulch question, and I make bold to reply that under some circumstances it might be advisable to use either of them as a mulch. It sometimes happens that they are spoiled by bad weather at haying time, and it would then be better to haul them direct to the orchard than to put them into the barn. Sometimes an orchardist has a surplus of hay and is tempted to sell. I made up my mind some time ago that no Timothy or other upland hay should ever leave my farm at a less price than nine dollars per ton, and I have had many tons of somewhat weedy but still salable hay hauled out from my barn and spread under the trees. As to clover, I must own having used it in prime condition as a mulch. I had a young orchard which needed enrich-

ing. By the aid of phosphate rock I got a handsome growth of clover. The first crop was mown and raked up near the trees a mulch; the second crop was allowed to go to seed. I propose to continue this practice till the clover runs out. I question whether there is on the whole any better way to feed an orchard than to rely wholly on mulch. Any kind of straw, grass or weeds will furnish all the needed ingredients, and have only to be applied in sufficient quantity to fully supply the demands of the trees and fruit. And this brings us plump against one of the objections to mulching.

First objection, its expensiveness. Now, to spread a little mulch around the trunk of each tree will not involve a great expenditure in a whole orchard, but to cover the entire surface would indeed cost quite a sum of money, or a great deal of work. But so does fertilizing by means of manure. A good farmer who had an opportunity to buy stable manure from any of our New England villages and wished to give a poor field a real good dressing would not think of putting on less than forty dollars' worth. Now forty dollars expended in mulching would probably put on six or seven tons, and that, I should think, would be a pretty good application for an acre, and I have no doubt that its effects would last longer than those of the manure. My friend, Mr. Weston of Belgrade, made this statement as the result of his experience: "If," said he, "you put a cart-body full of good barn-yard manure around an apple tree and two cart-bodies full of swale hay around another similar tree, the latter will show less effect the first season, an equal effect the second season and far greater effect from that time on."

Another objection which it seems should have some weight but not be conclusive, is that the result of discontinuing mulching after having employed it till the trees have attained considerable size is a serious check to their growth and fruitfulness. Evidently, however, this objection has nothing to do with the continued mulching of an orchard. It is only an objection to abandoning the practice.

There are yet to be considered two objections, which have, it seems to me, great weight, and which make me doubtful as to the advisability of mulching, after having satisfied myself that from every other point of view it is the best mode of treatment. These objections have reference to the harboring of vermin and the danger of fire.

I have never observed amongst my own trees anything that would lead me to think mice were more likely to gnaw mulched trees than those not mulched, but the testimony of others is quite strong. As

to insects, I very much fear that mulch affords a better lodgement to the codling moth than they can find either in turf or tilled surface. A large proportion of these worms, on leaving the apple, drop to the ground and then start for the tree, an unerring instinct seeming to guide them toward its trunk, which they ascend a little way, in search of shelter, giving us an opportunity to trap and destroy them. If the ground is encumbered with any kind of impediment a large part of the worms appear to be prevented from reaching the tree, doubtless making their cocoons under shelter of the rubbish on the ground, where we cannot find and destroy them. The apple maggot is another insect which may profit from the presence of mulch, though too little is known of his habits and wants to warrant us in drawing positive conclusions.

Finally, the man whose earthly possessions consist largely of apple trees surrounded by such combustible material as dry mulch has good reason to wear an anxious face those breezy spring days between snow and grass, and cast many a nervous glance to windward on the watch for the column of smoke which is to be the precursor of the ruin of his hopes. Perhaps by and by we shall have a system of insurance against such losses, but for the present we who choose to mulch must shoulder a great risk. I have never known of any very serious losses from fire, but minor losses have occurred in my own neighborhood, which would have been great disasters had the entire ground been covered with mulch. Perhaps it would be well to leave the ground immediately about the trunk of a tree bare of mulch. When the trees are young this space could be hoed, and when they are older it could be allowed to go to grass, which would never be very stout under the spreading branches.

Thus, as I intimated in the beginning, though for a while I was able to blow a good horn in favor of mulching, yet has candor compelled me to come out of the little end at last and own myself just ready to crawl into my boots through fear of what may befall me as the result of what I have done and propose still to do to my apple trees.

The next paper presented was,

MISTAKES IN FRUIT GROWING.

By D. P. TRUE.

After twenty years of mistakes and some partial successes, I think you will pardon me for the use of a few moments of your valuable time, and these few words of caution are not intended for you, as

each of you know too well that "eternal vigilance" is the price of good fruit. We do not wish to discourage beginners, for we believe in the grand possibilities of the business, but in this short chapter I will point out some of the obstacles that beset the path of the fruit grower.

Many have made the mistake of setting cheap or poor trees, picked up in the woods or other places; trees covered with bark lice or stunted. All such trees are very unprofitable.

One of the most common mistakes made by some of the best orchardists is in having too many varieties, making more work in harvesting and not so desirable. In some cases a number of varieties have been placed in one tree. This is one of the worst mistakes. Different locations require different varieties to get the best results. Big mistakes in the selection of varieties have been made. One of the great questions with the orchardist is, What is the most profitable variety to grow and meet the wants of the present and future market? Mistakes are quite common in the distance of planting out trees. This question is largely one of circumstances. If one has more land than money it may be best not to set so near. Where land is more costly, trees may be set twice as thick as needed, and when the trees cover the land one-half of them may be removed.

One of the saddest of mistakes is where one puts trees in old worn-out grass fields and wholly neglects them and expects to raise an orchard. All such cases end in a miserable failure. Another mistake is in placing mulch so near the trunk of a tree and in such quantity that it will heat and kill the tree. The writer can testify to the loss of fifty valuable trees killed in this way.

Losses may occur from mice and the borer. Some have had whole orchards destroyed by one or both of these enemies. Careful pruning is necessary, but some have made bad mistakes in this direction; the leaves are to the tree what the lungs are to the body. Extreme cutting should be avoided.

In grafting, orchards in some cases have been nearly ruined by sawing too large limbs or hubs, setting poor scions, grafting limbs in the center of the tree, using poor wax, neglecting to look after the scions after the work has been performed. These have been the cause of much damage. Turning sheep and lambs into a young orchard without taking the precaution to coat the trunks of the trees with manure, has caused a big loss in some cases. Oxen and large cattle have proved very fatal to young trees, when turned into the

orchard. Allowing trees to over-bear and break themselves down, is a mistake. Thin the fruit, but do not prop the limb.

If one has dwarf pears, as the quince root is fibrous, do not let the ground remain in grass; if you do you will make a mistake. Paying big prices for new varieties has in some cases proved a mistake. The writer has seen, in Washington County, large orchards, comprised mostly of Sulard crab. I think we shall have to call *that* a mistake. Tree agents sell us a bill of trees of a certain variety, and when they fruit they do not prove true to name. What shall we do, keep our temper and call it a mistake? But, in fruit growing, as in most other business, the profits are in proportion to the risks; and to all those that have a taste for the business we would say, grow fruit by all means. With the keeping qualities of our Maine fruit, and the large foreign demand, with our conveniences for shipping, the value of our fruit, compared with that from some other states in the Union, our cheap hill-sides so well adapted to fruit growing—when all these advantages are considered, what fairer prospect could we ask than to have good orchards on our farms?

The next paper presented was,

CAN THE CODLING MOTH BE TRAPPED?

By SAMUEL C. HARLOW.

Under this head *The Home Farm* of January 7th published an article from the *Orange County Farmer* informing its readers that Mr. Smith, who had raised a large crop of fine winter apples, including Northern Spies, Greenings, and Kings—perfectly sound and free from worms—attributes his success to the placing in each tree a small tin cup with a solution of molasses, vinegar and water to attract the codling moth. As might be expected, the result, to use his own words, was, that he captured myriads of moths of various kinds, and he *thinks* a good many codling moths. But right here, when the success of this method seems so certain to the uninitiated reader that he resolves to use his own fruit in the same way, Mr. Smith dashes the hopes of his reader by the cool admission that he is not sufficiently versed in entomology to positively identify the codling moth; so that the question of whether among the myriads of moths, millers, beetles, bugs, and other insects (many of them in-

jurious to orchards) there was a solitary specimen of the *Carpocapsa pomonella*, is one that will never be answered.

In replying, from my own experience, to the question that heads this article, my answer is: not in open-mouthed bottles or vessels of liquor, as I have found to my disgust. For several years I have experimented with sweetened water, vinegar, sour milk and other solutions, invariably without any good results, and my experience is sustained by some of our most experienced entomologists.

A friend of mine is confident that he destroys the codling moth as well as other insects, by bonfires through the orchard the last of June or in July. Yet it is an indisputable fact that this destructive insect is less attracted by light than other insects. It works by night and is rarely seen in its natural state in the day time.

My own opinion is that the codling moth cannot thus be destroyed. I will now refer briefly to a few methods of trapping the codling moth, each of which is successful to a limited extent only. The first, and that which is most satisfactory, because of its certainty, is to keep the doors and windows of the fruit house or cellar closed from the time the trees blossom through the month of July, or until all the larvæ have hatched and come from their cocoons, which may be found secreted in the crevices of barrels, boxes and baskets. In these dark recesses the insect changes to the perfect moth, and soon finds its way to the window in its attempt to reach the orchard. I have often taken advantage of this fact by destroying, with the aid of a broom, hundreds if not thousands yearly, as they fluttered on the inside of the window pane.

In localities where one is not troubled by his neighbor's insects many larvæ of this moth may be trapped and largely destroyed by tacking cloth bands around the trees just before the worm begins to leave the fruit. Cloth is considered much better than paper for this purpose. With strips of thick, warm cloth tacked around the trunk of the tree, I have in some cases caught not less than fifty at one examination of a tree. These examinations should be made weekly, and continued through August. Better results are obtained, if at the time of applying the cloth the trunk of the tree and larger limbs are scraped and the hiding places removed. After scraping the tree apply a strong soap wash to keep the bark smooth.

Many insects may be destroyed by picking off the wormy fruit as soon as it can be detected, before the insect leaves the fruit to enter the chrysalis state, and although but a part of the infected ones may

contain a worm, it is small satisfaction to feel when you get one that you have not only destroyed the possible destroyer of a dozen fruits, but also prevented a manifold increase of these pests. All infested fruit, whether gathered from tree or ground, should be fed as soon as possible to stock, and thus prevent escape.

In regard to the advantage of sheep and swine in orchards to destroy the fallen fruit, it is evident that if the orchard is isolated it will be benefited in just the ratio of the fallen fruit destroyed, containing worms, to that portion from which the worms escaped before falling.

A trial of these several methods for years has satisfied me that however good any or all of them may be as aids, they are at best but partial remedies, that cannot be depended on for effectually destroying this worst enemy of the apple.

In an article on *this subject* two or three years ago, I reluctantly expressed the opinion that a resort to spraying with insecticides was the only effectual remedy. The general success attending this method during the last two years in the Western States, together with limited experiments made by myself, have convinced me beyond a doubt that spraying is the most successful remedy yet discovered. The general use of insecticides (poisonous or otherwise) for the destruction of the codling moth, as well as the canker worm, leaf roller, and various enemies of the apple, opens a wide field for investigation and experiment. I will briefly refer to a few of these.

Although there are many cases reported among western orchardists of the successful use of London purple, Paris green and white arsenic, there are very conflicting opinions as to the merits and demerits of each. For instance, London purple is recommended for its solubility in water, the purple color of the water showing plainly where used. On the other hand, it varies so much in strength that it is exceedingly difficult, as I have found, to determine the strength of the solution of a pound in a given quantity of water, or whether it will injure foliage or fruit, without first testing it on a branch. A test may require several days. Owing to the adulteration of Paris green with baryta, the strength of that also is uncertain; while its great specific gravity necessitates constant stirring, while spraying, in order to apply it evenly. In the use of arsenic (which to be pure must be white, not gray) great care is necessary in handling. To prepare it, take a pound of arsenic and boil rapidly for an hour in four gallons of water. This should be done in the open air. Care

should be taken not to inhale the steam. When dissolved, reduce to about 200 gallons to make it safe for the foliage. Care should be taken not to give any part of the tree a double portion or throw the spray forcibly against the leaves, as I have myself scorched the leaves by neglecting both of these precautions. When spraying, always stand so as to throw the spray with the wind, beginning always on the lee side of the orchard, working backwards against the wind. In two experiments with a solution of London purple, at the rate of one pound to 200 gallons of water, owing to the uncertain strength of the purple and the force with which it struck the leaves (thrown by a fountain force pump), or from both causes combined, I found within a few days the foliage and fruit were both scorched to an extent that dwarfed them for the rest of the season. I would advise novices to test the strength of this and all other arsenical solutions, by spraying a single branch and noting its condition a week afterwards.

For the destruction of the first brood of worms it should be applied as soon as the apples are as large as currants. As to the number of applications, more light from actual experiment is needed. If a rain occurs soon after spraying, the operation should be repeated. Let me here say, in connection with the subject of rain, that all animals must be kept out of the orchard after spraying with either one of the above-named solutions, until heavy rains have washed the foliage and grass.

In what I have said above about spraying by any of the insecticides, reference is made to the first brood of worms only. If successful in destroying these and your neighbors do the same, there will be no *second* brood. Further experiments are needed, not only to determine which of the three above-named substances is best, but also, if possible, to find some insecticide that can be safely applied to the destruction of the second brood (where there is one) without injury to the fruit. Hoping to be able to attempt, if not accomplish this the coming season, I will close by reminding fruit raisers that after two large crops of apples in succession, we may expect a small one of fruit, accompanied by a large one of codling moths next season, and we should act accordingly.

Hon. Z. A. GILBERT then made a few remarks on the

MANAGEMENT OF FRUIT EXHIBITIONS.

The speaker referred to the practices employed in the exhibition of fruit in former times. In the last ten years a great advancement has been made, dating from the Centennial Exhibition. There must be plenty of room to arrange the exhibition of fruit in order for it to look well. If anything, you have been too modest in your demands for room. The entire upper hall of the exhibition building at Lewiston is none too large in which to properly arrange the fruit. In order to make this display as it should be, the plans should be definitely laid out in advance and a general system arranged. The leading exhibits should have the most prominent places and a sufficient amount of room should be reserved for the exhibition of the single plates of fruit. The exhibitors should have their fruit on hand promptly and the awards should be made by the judges before the crowds appear and before the fruit becomes second hand. We should have platters instead of plates on which to exhibit the fruit, as being more suitable to its proper display. The beauty of the floral exhibition is largely brought about by the careful arrangement of the many varieties. All samples of fruits and flowers shown should be perfect and representative of their kind.

The remainder of the afternoon was taken up with

DISCUSSION.

Mr. GILBERT. Mr. Brown, have you had any difficulty with blackberries winter killing?

Mr. BROWN. Yes, I have. The Wachusett Thornless has bothered me the most. But still I know where I can find them growing wild. The Snyder is a hardy plant. I know a man in my locality who planted an acre. He had done so in other counties and failed, but succeeded well here. I cannot recommend any one variety.

Mr. GILBERT. Is the Wachusett hardier than the Snyder?

Mr. BROWN. I don't know that it is. I think the hardiest if allowed to grow long canes will winter kill. In pruning, if my plants grow vigorous in June, I prune them; if they grow slow all summer I don't prune them at all. A man must use common sense in the matter of pruning.

Captain JORDAN. What time do you put out the plants?

Mr. BROWN. Just as soon as the frost is out of the ground a foot deep.

S. L. BOARDMAN. Does your market demand the blackberry?

Mr. BROWN. I sell ten times as many strawberries as blackberries. In order for a blackberry to sell well it must be a good one. I have little competition. Unless there is a clear field in market I would not recommend to plant only enough for home use.

Mr. L. F. ABBOTT. Do they rust?

Mr. BROWN. No, sir.

Mr. NELSON. Do you use anything to keep the canes from breaking in the winter?

Mr. BROWN. No, sir.

Mr. NELSON. How tall do they grow?

Mr. BROWN. The first year two feet; the second year I allow them to grow higher.

Mr. NELSON. How do you prune?

Mr. BROWN. I pinch the crown of the cane. To stop upper growth, snip with shears.

Mr. NELSON. Do you pay any attention to buds?

Mr. BROWN. No, sir.

Mr. BRIGGS. You mention strawberry culture. Does it make any difference whether the plant is taken from near the original or farther out?

Mr. BROWN. Take it next to the parent stock. You can't prevent winter killing. You will lose more from the continual freezing and thawing than from any other cause. This action tears off the roots and leaves and finally throws the plants out of the ground.

Mr. BRIGGS. What do you do to keep them from getting soiled?

Mr. BROWN. That is a hard question.

Mr. BRIGGS. Did you ever use sawdust?

Mr. BROWN. No, sir.

Mr. JORDAN. Don't the raspberry throw up shoots?

Mr. BROWN. Yes, they all throw up shoots. I set rows five feet apart and set out five in a place. I like to have thick places near together. From these places I take out shoots to set.

Mr. NELSON. Are the cultivated raspberries troubled with the maggot?

Mr. BROWN. I have raised bushels and sold them to private customers who did not find a maggot in them. I don't deny but what they are there, but they are very few.

Mr. NELSON. How do you account for this?

Mr. BROWN. I suppose the maggots don't like them. Many do not like the cultivated berry. I sort mine in a bowl, put on some powdered sugar and put them in a cool place for twenty-four hours. They do not taste like the native berry.

Mr. ATHERTON. I want to say a word on the subject of our fall exhibition. I was much pleased with the remarks of Secretary Gilbert. I realize that there is need of more room, but we are pleading and not demanding and we should act as though we were at the courtesy of the Agricultural Society. The rule that the exhibits should be there at just such a time or be struck out is a hard one, and should not be enforced. We should reduce the number of our varieties. I believe we should have a separate exhibition.

Mr. BOARDMAN. We have, as a society, received the most courteous treatment from Judge Prince, who, with his one thousand and one other things to act upon, has been at a loss to see how to give us more room.

Mr. GILBERT. I don't agree with Brother Atherton in regard to a separate exhibition. The people want the two held together, and it will produce more effective results.

Mr. BOARDMAN. Very many persons here will remember the exhibition of the Society held in Portland in 1874. It was one of the finest the Society ever held, but there were but very few to attend it, and that is the reason we want the two exhibitions combined.

Mr. KNOWLTON. I want to revert to the question of the hardness of the raspberry and blackberry. I agree with Mr. Brown in regard to pruning. It is quite as essential to cut out the suckers that come up from the bottom as from the top in both the raspberry and blackberry. I allow only three or four suckers to a plant. If you allow the Turner to have its own way it would set up a forest. I think this has a good deal to do with the hardness.

EVENING SESSION.

BUSINESS MEETING OF THE SOCIETY.

A business meeting of the Society was held at 6.30 o'clock, preceding the public session, President Pope in the chair.

Z. A. Gilbert, L. H. Blossom and S. L. Boardman were appointed a committee to consult with the managers of the Maine State Agricultural Society in reference to enlarged accommodations for the proper display of the horticultural exhibit next autumn.

Mr. S. R. Sweetser, from the committee on the fruit exhibited, reported the following specimens contributed by the several parties mentioned: R. H. Gardiner, Gardiner, seven varieties; D. J. Briggs, South Turner, thirteen; Albion Ricker, Turner, six; John M. Jones, Turner Centre, six; D. H. Knowlton, Farmington, five; C. H. Moody, Turner, two; W. P. Atherton, Hallowell, seven; R. D. Leavitt, North Turner Bridge, five; L. H. Blossom, Turner Centre, thirteen; N. W. Adams, Turner Centre, two; D. House, North Turner, six; G. W. Blossom, Turner Centre, fourteen; F. E. Nowell, Fairfield, nine; Rufus Prince, Turner Centre, eight; O. C. Nelson, Upper Gloucester, six; S. R. Sweetser, Cumberland Centre, five; A. E. Bradford, Turner Centre, one.

D. H. Knowlton, for the committee on the President's address, presented the following report:—

Your committee to whom was referred for further consideration the annual address of the President, having attended to the duty assigned them, beg leave to report:—

The suggestions made in the address are excellent and deserving of careful study by the fruit growers of the State. For the consideration of fruit growers in particular we call special attention to those portions of the address urging the importance of obtaining good nursery stock, of uniting together for the purpose of gaining more knowledge of fruit growing and securing better prices for fruit.

For further action of this Society we recommend,

1st. That a special committee on nomenclature be appointed by the President, to serve at the annual exhibition, whose duty it shall be to name, as far as possible, the varieties exhibited "for name," and to correct those wrongly named.

2d. That the Executive Committee take such measures as may be necessary "to enforce the rule, that no one shall be allowed in the hall at the close of the exhibition except those that have a pass with permission to remove goods."

3d. That this Society recommend the passage of a law by the State Legislature fixing the size of the apple barrel.

4th. That the President and Secretary of the Society take such measures as may seem proper to them to secure horticultural statistics, to confer with the Commissioner of Agriculture and other horticultural societies for the purpose, and to promulgate from time to time such information as will be of value to fruit growers of the State.

The report was accepted and the following action taken upon it: Under topic 1, Samuel Rolfe, W. P. Atherton, and D. P. True were appointed a committee on nomenclature; No. 2 was adopted; No. 3 was tabled; No. 4 was adopted, and referred to the Executive Committee for being carried out. The business meeting then adjourned and the public session opened.

PUBLIC SESSION.

The hour at which the public session for the evening was fixed having arrived, President Pope called the meeting to order and introduced the Secretary, Mr. Boardman, who read the following paper.

AN APPLE: HOW TO PICK IT, AND WHAT TO DO WITH IT.

By the Secretary, SAMUEL L. BOARDMAN.

Well has Downing called the apple, "The world-renowned fruit of temperate climates." Like wheat among the cereals, and the potato among vegetables, it stands with them at the head of its class and may most appropriately be denominated the "King of Fruits." No other fruit of the temperate zone has so wide a distribution, or attains excellence in so extensive a range of countries—being found as it is in nearly the whole of Europe, Northern Africa, Northern Asia, China, Japan, throughout the whole of North America, in South America (being abundant in Southern Chili) and in Australia. In fact, wheresoever civilization has planted its home—in all the temperate latitudes of the globe—there this king of fruits may be found not far from the cottage door, and its fragrant bins, in all their unctuous beauty, repose in the home cellar. In the United States apple orchards are cultivated from Florida to Alaska—even in so high a

latitude as Sitka it blossoms in June but does not always perfect its fruit. The apple has been praised among writers and poets from the most remote periods of antiquity. In some countries the custom yet lingers of placing a rosy apple in the hand of the dead that they may find it when they enter paradise. Among the heathen gods of the northern mythology the giants eat apples to keep off old age. May it not be that with us moderns they had found out the health-giving properties of this glorious fruit, and endowed it with qualities which conduced to health and long life? Certain it is that the apple is full of vegetable acids and aromatics, which act as refrigerants and antiseptics—enemies to jaundice, indigestion and that dreaded member of the human system, a torpid liver. It is a gentle spur and tonic to the whole biliary system. Chemists also tell us that the apple contains a greater per cent of phosphorous than any other fruit or vegetable—which makes it a proper food for the scholar and sedentary man, feeding his brain and stimulating his liver. This was probably the view taken of the apple by that good old clergyman of whom John Burroughs tells us, who on pulling out his pocket-handkerchief in the midst of his sermon, pulled out with it two bouncing apples that went rolling across the pulpit floor and down the pulpit stairs. These apples were, no doubt, to be eaten after the sermon, on his way home—they would take the taste of it out of his mouth. Then, beside, it would be impossible for a minister to grow dull or tiresome with two big apples in his coat-tail pockets. He would naturally want to hasten along to “finally” and the apples—especially if the season were late fall and the apples Nodheads. Moreover, we must not forget that the apple is full of sugar and mucilage, which makes it highly nutritious. The English extol the apple in the highest terms. Mr. William Robinson, a great horticultural authority, of London, pronounces the American apple “the grandest fruit that ripens under the sun.” And well he may, for the English apple is an insipid, tame affair, compared with the solid, aromatic, sun-colored and sun-steeped fruit of our northern orchards. In the humid, cloudy and foggy climate of England, the maple tree yields no sugar, and the apple tree no such sweet, delicious fruit as do our Tolmans and Franklins. “The grandest fruit that ripens under the sun.” That may sound extravagant—but is it not true? What single fruit is adapted to so universal use, and to such universal taste? It compasses in its eatable, fresh condition, in all the markets of the temperate-zoned world, eleven months certainly of the

yearly round, and in extreme instances the two ends of the year meet with apples still upon the table. Like bread, one never tires of the apple. Of what other fruit of the tropics or the temperate climate can it be said that everybody likes it at all times of the year? Pears, plums, grapes, oranges, figs, dates,—run through the entire list, and the apple will outlast them all. While the market is supplied with corky oranges, picked under-ripe, or with canned and preserved fruits from different climes, as insipid as they are costly, the northern-grown and northern-ripened apple, full to the bursting of the stored-up richness of the ripening autumn sun, takes its place on the fruit stands—a whole length ahead of them all, cheap in price, and appealing to the satisfaction of every taste.

Of all the English-speaking writers, I think John Burroughs has given to our apple its best “character.” I have hunted in vain, through the whole body of our horticultural and poetic literature, for a better description of it than this charming author has given, but I fail to find it. If I were a good reader I would ask you to listen while I read you a few pages of his delightful word-painting of this most magnificent fruit. As it is, will you listen to a few sentences?

“The apple is the commonest and yet the most varied and beautiful of fruits. A dish of them is as becoming to the center-table in winter as was the vase of flowers in summer—a bouquet of Spitzenbergs and Greenings and Northern Spies. A rose when it blooms, the apple is a rose when it ripens. It pleases every sense to which it can be addressed—the touch, the smell, the sight, the taste; and when it falls, in the still October days, it pleases the ear. It is a call to the banquet, it is a signal that the feast is ready. * * * How pleasing to the touch. I love to stroke its polished rondure with my hand, to carry it in my pocket on my tramp over the winter hills, or through the early spring woods. You are company, you red-checked Spitz, or you salmon-fleshed Greening. I toy with you, press your face to mine, toss you in the air, roll you on the ground, see you shine out where you lie amid the moss and dry leaves and sticks. You are so alive! You glow like a ruddy flower. You look so animated, I almost expect to see you move! I postpone the eating of you, you are so beautiful! How compact! how exquisitely tinted! Stained by the sun, and varnished against the rains. * * * Noble, common fruit, best friend of man and most loved by him, following him like his dog or his cow, wherever he goes. His home-

stead is not planted till you are planted; your roots intertwine with his; thriving best where he thrives best, loving the limestone and the frost, the plow and the pruning-knife, you are indeed suggestive of hardy, cheerful industry and a healthy life in the open air. Temperate, chaste fruit! you mean neither luxury nor sloth, neither satiety nor indolence, neither enervating heats nor the Frigid Zones. Uncloying fruit, fruit whose best source is the open air, whose finest flavors only he whose taste is sharpened by brisk work or walking knows; winter fruit, when the tree of life burns brightest; fruit always a little hyperborean, leaning toward the cold, bracing, sub-acid, active fruit. I think you must come from the north, you are so frank and honest, so sturdy and appetizing. You are stocky and homely, like the northern races. Your quality is Saxon. Surely, the fiery and impetuous south is not akin to thee. Not spices or olives, or the sumptuous liquid fruits—but the grass, the snow, the grains, the coolness, is akin to thee. I think if I could subsist on you, or the like of you, I should never have an intemperate or ignoble thought, never be feverish or despondent. So far as I could absorb or transmute your quality I should be cheerful, continent, equitable, sweet-blooded, long-lived, and should shed warmth and contentment around ”

There, let us take breath; and while doing so I want to introduce you to the apple growing upon the trees we are to pick this evening. A grand sight, this orchard upon the hill-side with its branches borne down by the burden of sun-perfected fruit in the glowing days of early October. Every tree a bouquet, every apple, as it is, twin-brother to the rose. I have looked carefully through the list of the three thousand named varieties of this fruit to find the one single variety which we are to make the leading sort for our commercial orchards—the American Pomological Society’s list of 322, and our own list of 85 varieties have each been diligently studied, and I have found my one noble apple that heads the list and occupies the highest place in the winter bin. It is an apple that adapts itself successfully to a wider range of climate, soil and location than any other sort; handsome in form and color, a deep, rich, magnificent red; solid and firm as a rock in flesh and texture; an apple that may be kept till August, and is in splendid condition all through the winter and spring, even into June; that stands transportation and shipment to foreign markets better than any other variety; that is more in demand as a commercial sort, and better adapted for Maine

growers than any other that can be named—in one word, the Baldwin, a native of our old mother State, and the king of the New England orchard. Well, some may raise objections to my typical variety, and bring a lot of grave charges against it by reason of flavor, or other disqualification. It is not my purpose to argue with such; my purpose is to deny *in toto* their entire premises, and to insist that this is the one sole variety best adapted to commercial orchards in this, our splendid orchard State. To be sure, a man will want a few other kinds, a tree or two of some early fall apples; in all, not more than a dozen, possibly half a dozen would be better, of the late fall and winter sorts for the dinner-table and evening fire. This selection I leave every one to make for himself. What does a man grow trees and raise apples for?—that he may obtain cash from the business. It is this that he is after; and with no other variety can he get so much money, one year with another for a period of ten years, as from the Baldwin. The buyers tell us if the great apple handlers are to order a thousand barrels of apples, nine hundred and odd barrels will be Baldwins. The business of past years proves it; I can see no variety likely to take its place in the future that is to be. Therefore if you plant or graft for the coming years, plant and graft the Baldwin. It is the commercially-successful apple of the great north.

Our apples are now ready for the harvest—how shall they be gathered? Not as in the days of our boyhood, when two strong men went into the trees, and, shaking the branches as if they would tear the limbs from the trunk, sent the bullet-like apples rattling down upon the stubble, rubbish and rocks, and over the backs of us youngsters who ran under the trees for “fun,” like shot from a modern Gattling gun—while another, with a long, crotched pole, gave the out-reaching limbs such fearful knocks, as though he were punching a refractory pig at arm’s length. We have improved upon that. Then cider was the chief end of the orchard, and of some men, too, for I remember my old uncle had a cider tank built in his cellar, as large as a forty-hogshead cistern, which was fitted up with faucet, depth gauge, and other modern conveniences, and upon which he set his heart more than upon all the apples in his orchard, or the cattle in his stalls. Now the art of picking apples has come to be quite a study—in fact, almost a science; and I don’t see why in the future a skilled apple picker should not be called “Professor” with quite as much propriety as a corn doctor or dancing master is

now. Among the first requisites, there must be a good supply of ladders—not your lumbering, back-breaking ladders, with sides four by four, and rungs as large as a stick of stove wood, which it will take two men to elevate in position upon a tree, and will want a horse and pair of wheels to move about the orchard—but a strong, light, well-built ladder, wide at the base, to stand firm, and narrow at the top, in order to run in among the branches with no injury to the apples; a ladder which a man can take in one hand and walk off with, raising to the tree easily, built of smart wood, and painted. Don't have these ladders too long, but graduate them to the height of your trees. Step-ladders are also useful for the branches that cannot be reached conveniently from the ground. Next, you want a number of picking baskets—those which have the adjustable bail, like that of a water pail, are the best; because, in placing the basket of apples into the barrel the bail will tip back, allowing the basket to be inverted, when it can be removed, the bail or handle lying back over the side of the barrel out of the way. These baskets should all be lined with old carpeting or sacking, so that the fruit may be placed in them without fear of giving them a scratch or surface bruise, which is sure to discolor and injure it. Furnish each basket with a hook, by means of which it may be fastened to the rungs of the ladder or branches of the tree, leaving both hands free for business. Now we are ready to begin.

In the first place, pick from the lower branches all apples that may be reached from the ground. On some trees, trained low, this will be considerable. My wife, who is a better farmer than I am, has picked two barrels each, from many of my trees, standing on the ground, without uncomfortable reaching. Next, with the step ladder placed *under* the tree, gather all that can be reached from it among the inner branches. Now the ladders will come into use upon the outer limbs and extreme top of the tree, the stout branches making a good stage for the pickers' feet—I say *stout* branches, for remember that broken hips almost invariably lie concealed in small, weak ones. When the business of picking is in full blast one or two men should be constantly upon the ground to assist in receiving and emptying baskets from the pickers in the tree and thus save time, while a sufficiency of baskets, for exchange, should also be provided. Move about the tree carefully and steadily, or many apples will be knocked off and lost—as all apples that fall go into No. 2's or even ciders. In picking, follow out the branches from the trunk, picking

clean on each one, and keeping finished work all the time. On the outmost branches pick the apples from the terminal end first, as the motion of the branch from picking is liable to shake off those from the extreme end. Moreover, where three apples are tucked on closely together pick the best one first—make this an invariable rule always, so that if by mischance one falls, it will be the smaller and inferior one. Never twist or jerk an apple from the limb, but, grasping it from the bottom, lift up on it gently and quickly. The apple loosens in an instant without having disturbed its near neighbors. Having gathered your tree, all the apples having been put into the same barrels to be sorted, then pick up those that are upon the ground by themselves, and, as Artemas Ward said, “move on.” It is a trade, a science, as I have said, to pick a tree—the New Brunswickers call it “pulling” apples—and one that some men can never acquire. Boys make the best pickers, I think, where they will give heed to it. A bright city boy, whom I picked up last fall to pick apples for me, picked four barrels from one tree and did not drop or knock off but five apples while doing it. How many apples can a man pick in a day? I judge that ten barrels is a good day’s work. But Mr. E. K. Whitney of Harrison told me that he took his boy home from Bates College to help him gather apples, last fall, and he picked forty barrels in one day, just to see what he could do. Bates is not an agricultural college, but I doubt if Orono could send out a boy who could do better.

If the apples are to be barrelled in the fall, the work of sorting and barrelling comes next. But whether they are barrelled or not will depend upon the early demand for them. We will assume they are to be put up as soon as picked, or within a few days, and will begin sorting up the pile which has been brought from the orchard, No. 1’s and No. 2’s together. We want No. 1 apples. Now, what constitutes a No. 1 apple, that is to say, a first-class marketable apple? This question will be decided, somewhat, by the conditions of the season, a large yield or otherwise, and by demand and supply. In some years that would pass for a No. 1 apple, which in other years would be at once discarded and put into the barrel of “seconds.” A No. 1 apple must be of good size, fair, unbruised, have the stem attached, and be free from worm holes. Size is of course a comparative quality, but a first-class apple should not be a small one. An apple having a bruise or scratch upon it should never be included in a barrel of No. 1’s; and all apples that fall in picking, however

large or fair, must be rightly consigned to the "seconds." Falling cannot but bruise them even if the bruise does not at once appear; but soon the bruised spot becomes discolored, decays, and produces injury to a whole barrel. It is not necessary to have stems attached to all apples classed as "ones," but the facing apples should all have stems attached to them. Occasionally an apple with a worm hole in the blossom end may be admitted to a No. 1 classification, if otherwise large, fair and sound; but a worm hole in the side discards an apple from this class, however fair it may otherwise be. In barrel-ling have sweet, clean, good barrels—new ones if possible, if not, flour or cracker barrels thoroughly washed and cleaned, with all nails bent or broken off; this work having been done during the dull days of haying, and not just at the moment when used, for apples should never be put into barrels not perfectly dry. First, into the bottom of the barrel, which is to be the opening end, lay in a large sheet of white, unprinted paper, then face in a layer or two—some handlers want two layers faced—stems downward. Fill the barrel by emptying in the picking baskets full, one after another, giving each a steady but quite vigorous shake to settle them into position, until the barrel is full, having the last apples come a little above the chine. Head by means of the screw header, nail in the head securely, and with small twisted brads which will not go through the staves, see that the hoops are securely tacked down. Now, having grown and packed apples of which you will not be ashamed in any market in the world, put upon the head of each barrel a printed label bearing the name of the variety, and the name and place of residence of the grower, or name of the orchard, if you have a fancy or home-like name for your place or orchard. These are necessary requisites in obtaining a reputation for your fruit, and you want a reputation if you expect money and success from the business. So far, we have been talking only of choice No. 1 fruit. Your seconds must be reserved for domestic use or the local home markets. The windfalls must be fed or disposed of in some other way. I am so much opposed to cider manufacture, cider manufactures so many tipplers who graduate from the higher paths of liquor drinking, that I would bury all my windfalls rather than have them used for so diabolical a purpose. Still, good cider vinegar is infinitely better than the acidulated water sold so largely for vinegar, though the market for vinegar is not a large one, hereabouts, and is usually well supplied.

Now, having picked and barreled our apples, what shall we do with them? That is the "prize conundrum" for this year, I think, though possibly another fall may solve it to our satisfaction. But, with our cellars and bins full, a slight demand, and a price that barely pays the cost of growing, picking, barrelling and marketing, it really is a most serious question as to "what are we going to do about it." Of course we want to sell them, to get the highest price we can for them, and if we could have things just to our liking we would want an abundant yield in Maine, no apples in England, a slight crop in New York and Michigan, and a big price all winter for apples delivered in Portland. All these conditions don't come round just as we want them every year, but of one thing we may be quite sure—two years in succession where the opposite conditions present themselves are not likely to be followed by a third of like nature. So let us take courage. Two or three things may be mentioned as being *generally* correct—to be qualified somewhat, of course, by the particular characteristics of the season. These are, first, that *generally* the sooner you can get your apples marketed after they are barreled and ready for market, and get the money for them down into your trousers pocket, or into that "old stocking leg" in the till of the chest, the better. There is shrinkage, waste, loss, expense, and risk in holding, re-packing, etc., and if you can sell in the fall at a good price, and avoid all this, be sure to do so. But observe, be wise! Don't send your apples to England, or anywhere else, on an over stocked market, because you want to get a reputation, as Secretary Gold did, and when all expenses are paid find you have not enough left to pay for picking and hauling to market. In one week last fall four American ports sent to England a total of 440,875 barrels of choice American apples, and kept it up for several weeks. Of course prices were low. Again, secondly, remember that *generally* we must plan to keep back our apples till spring. We grow the best late-keeping apples that ripen under the sun. I say we, and mean *we of the State of Maine*. But we have not the facilities for properly keeping them. House cellars, as a general thing, are not fit to keep apples in from November to April. They are too warm, are filled with vegetables and other necessary supplies, and are thoroughly unfitted to become the storage places for commercial apples. Cold storage cellars, or refrigerating houses, are coming to be an absolute necessity with our

orchardists who are to make commercial apple growing a business. When in Nova Scotia, two summers ago, I visited the great apple storage house of Knill & Grant, built on the wharf of the Acadia Steamship Company—a building 100 by 150 feet, built of brick, and having a capacity for storing forty thousand barrels of apples. The foundation wall was of stone, the cellar bottom being six feet below high water mark, the walls of the elevation being one foot in thickness. The bottom was very moist, a flooring of loose boards resting on joist four inches above the earth. The temperature of this house was kept throughout the winter at thirty-five degrees. On June 5, 1884, apples were re-packed in that house which had been in there for six months, with a loss of only two barrels in one hundred, and the apples sold in Boston at \$5.00 per barrel. Mr. Angur, State Pomologist of Connecticut, says there are several retarding or refrigerating houses in that State, used for the storage of apples, and he strongly recommends the co-operative plan for their further erection among the fruit growers of that State; say, forming a company for this purpose having a capital of \$2,000, in forty shares of fifty dollars each. Then let this cold storage house be built near to some business shipping point, and yet within easy reach of a considerable number of orchardists, who can avail themselves of its advantages for storing their apples until the period arrives when they can sell them on the top of the market. Is such a plan quite beyond accomplishment by the orchardists of Turner, Winthrop, or Farmington, or any other apple-growing town in Maine? Nay, is such a plan not probable, and is it not likely to be a reality in the not far-off future?

There are other uses of the apple and methods for its preservation to which I have not alluded, but which become important features of the business of apple growing in certain seasons. In years when there is a scarcity of apples, many will be evaporated, made into jelly, or hermetically sealed—as is now being done quite largely by the Winslow Packing Company—but for present consideration I have thought these points less important than in a year when they would be of more immediate application. Moreover, I am aware some of the details I have given may have seemed tedious to experienced orchardists, though I hope to the novice they may have been of service. At any rate, I could not have omitted them and say what I wanted to say about the Baldwin, how to pick it and what to do with it.

The next paper on the programme was contributed by Mr. S. R. Leland of Mt. Baldwin Farm, Farmington, read in his absence by Mr. Atherton.

THE FUTURE OUTLOOK FOR FRUIT RAISING IN MAINE.

By S. R. LELAND.

I shall not attempt to write a carefully worded essay on fruit raising, but instead write in a conversational and interrogatory style, as though I were conversing with a friend upon the subject. When I speak of fruit raising in Maine as a profitable business, a money-bringing crop, I mean principally the raising of apples. Pears, grapes and the small fruits cannot, in my judgment, be raised at a profit in Maine, except, perhaps, in the vicinity of our cities and large villages, but I would most surely recommend for every person who owns a piece of this earth, if no more than a village lot, to raise them in sufficient quantity (if he has the space to spare) for the use of his family, as a source of health, pleasure and enjoyment.

Is there any danger of an over-production of apples in Maine? The raising of certain classes of apples is already overdone. There is a large amount of inferior natural fruit raised in this State, mostly in the original orchards, which is worthless for any other purpose than for cider or feed for stock. Such fruit is of some value for the above-named purposes, but as the original orchards were almost invariably planted on the best tillage land on the farm, would it not be economy, where such orchards are too far advanced in decay to be grafted with any prospect of profit, to root them out and appropriate the land to other crops? Another class of apples raised in Maine far in excess of the demand is the summer and early fall varieties. That class of fruit matures at the season when the markets are overstocked with fruit of the same class. The tendency of such fruit to immediate decay after maturity makes it almost worthless to the orchardist in the interior of Maine except in sufficient quantities for family use. Now we come to the late-keeping varieties of apples such as have an established reputation in the markets. Is there any prospect of the production of that class of apples being overdone in Maine? The fine flavor and the late-keeping qualities of Maine apples have established for them an enviable reputation in all the markets of the world which they have ever reached.

Twenty-five or more years ago, when the tree agents began to flood Maine with the New York nursery stock, the cry was heard on every

hand "that orcharding would be overdone, that apples would be raised in such abundance that they would be worthless." Many doubting Thomases have kept up the cry and will tell you to-day that they have no faith in future orcharding in Maine. How is it after twenty-five years have elapsed since that cry was first heard, that note of alarm first sounded? Has there been any over-production of good winter varieties of apples in Maine? Are there any more indications to-day of an over-production of winter fruit in our State than there were twenty-five years ago? It is true, years like the present will come, when the crop is large and prices low. Do not depressions come in all branches of farming and all kinds of business? Does it fall upon orcharding any oftener than upon other branches of farming? And even at the low price of apples this year, is not the net income of a well-kept orchard of winter fruit as great as that of any other crop we have produced?

The future outlook for the production of popular varieties of winter apples in our State is to me particularly encouraging. Now let us glance at a few reasons why we come to this conclusion. There is no doubt but the next decade will see a large increase in the number of apple trees planted in Maine, but many failures will also be made. Scores of men will take the fever for orcharding who are novices at the business. Some will plant on unsuitable land; some will plant more than they can or will take *good* care of; some, lured by the pretty pictures and glib tongues of the tree agents, will buy varieties not adapted to our climate, varieties not wanted in the markets; some will plant and neglect them, thinking when the tree is planted their duty is done; some will plant for cattle to browse and rub, so that thousands of trees purchased and planted will never live to produce a paying crop of fruit. The future increase in numbers of paying trees will be small in comparison to the number planted.

No doubt there will be an increased production of apples in the future, but need there be any fears of an over-production on that account? Will not the increase of consumers who are not producers keep pace with the increased production? Are not new foreign markets likely to open for our best varieties of shipping apples?

Can the future orchardist improve on the present one? It is an established fact, in this section of Maine at least, that our high, rocky hill-sides, where deep soil is always found, is our best orchard land, particularly for the Baldwin. Would it not be wisdom for

future orchardists to plant their trees on such land and appropriate their good tillage land to other crops? Trees planted on steep and rocky land will need mulching with coarse manure and any vegetable matter for a few years, till their roots get well established among the boulders, after which they will flourish and bear excellent fruit without much care.

An orchard located on such land, perhaps, will not produce as bountifully as a cultivated orchard, but will not the owner realize as much or more net profit on the investment, taking into the account the low value of the land for agricultural purposes, as to plant his orchard on his best tillage? The future orchardist, to meet the demands of the markets and secure the highest price for his product, will have to sort and pack better than it has been the custom to do in the past. The markets are becoming more particular year by year on the sorting and packing of fruit.

The day is past when it will be wisdom for a man to send a barrel of apples to the markets with a few good ones on each end and the middle filled with refuse stuff, unless he is prepared to have them dumped into the dock.

The future outlook for the profitable production of the Baldwin and other varieties of popular winter apples in Maine is as good, in my judgment, as it has been at any other time within my remembrance. The man who plants an orchard in the future, selects a good soil and situation, propagates the right varieties, knows his business, studies his business and *attends to* his business, need have no fears that he will not receive a handsome reward for his labor and expense. A word in favor of the Baldwin as the leading apple to raise in this part of the State, and I will close.

The Baldwin tree, when planted on high land, where it belongs, has proved as hardy in Franklin County as any variety grown here, and has suffered as little from winter killing. It is a good bearer; the fruit hangs to the tree with great tenacity. It is attractive in appearance, an excellent cooking apple, a fair eating apple; will bear rough handling better than most varieties; stands up well to ship, and is one of the most popular apples in all the markets of the world where it has been introduced. A gentleman in Deering, who has been largely engaged in the apple trade for several years, told me recently that over three-fourths of the winter apples shipped to foreign countries were Baldwins, and a larger proportion than that

of those consumed in the cities of this country were of the same variety.

In consideration of so many redeeming qualities as the Baldwin possesses, and its still increasing popularity in the markets, and in view of the comparatively small area where it can be grown in its greatest perfection, it seems improbable and almost impossible that it will ever be produced in excess of the demand. The man who has the proper location for a Baldwin orchard and has in his make-up a good share of that all-important element requisite to success in *any* business, "stick-to-it-ive-ness," need have no fears to invest in Baldwin trees to the extent of his ability to give them *good* care.

* The concluding lecture of the evening was delivered by Mr. L. F. Abbott, agricultural editor of the *Lewiston Journal*.

THE FUTURE OF ORCHARDING IN MAINE.

By LYMAN F. ABBOTT,

Of the Lewiston Journal.

"The first duty of the farmers of our country is to provide our people with food and clothing," said an eminent agriculturist to an audience of Maine farmers not long since. To do this in the most economic line of labor, yet bearing results satisfactory in point of remuneration for capital and labor invested, is the paramount question with the Maine farmer to-day. Economic agriculture is a subject for thought, and through intelligent investigation has come to be the solid and magnificent foundation upon which the superstructure composed of all other economic industries directly rests, and indirectly every question which concerns the well being of society, as well. Intelligent agriculture lies at the foundation of our prosperity as a State.

There are various lines of work having an economic bearing upon the success of the cultivator of the soil. The relations of these to other or similar lines of economic agriculture within the borders of our own State, of New England, and measurably of the West, modifies to some extent success as measured by the usual standard of putting money into the pocket of the farmer. These relations have changed greatly within the last half century. Markets for all the products of the farm have changed. Methods of production, as well as the commodities produced, have undergone a wonderful change. This is true of our stock, our butter and cheese, our apples

and small fruits. In the production of fruit let us briefly glance backward over the history of orcharding in Maine, the better to get our bearings as to the future of this industry in our State.

IN ITS NATURAL STATE.

The orchards of Maine which primarily covered the hill-sides on the farms of the pioneers of our State, and which now have nearly all passed off the stage of duty in producing their inferior fruit, were mainly composed of trees bearing natural fruit. An orchard engrafted to better sorts of apples was the exception and a long way from the rule.

But the change was gradually made of grafting these natural apple trees, which were more or less produced on the farms where set, by fostering the chance seedlings which came up from scattered seeds of apples brought to or produced upon the farm. This, in brief, was the beginning, and for many years was the practice ruling in Maine orchards.

After a while our farmers began to wake up to progressive ideas—better fruit and more of it—as population increased and made a demand for both. Progress has been gradual on the same line to the present time, till now, in view of the amount of apples produced and the low prices which have ruled for the past two years, the question is frequently asked: Will orcharding in Maine pay in the future, taking into consideration the greatly augmented interest shown in this industry within the last ten years all over our country?

This is the vital question which interests orchardists in Maine at the present time. In the first place let us consider the present status of Maine apples in relation to the markets.

PERISHABLE FALL FRUITS.

Our orchardists, as a whole, cannot count on a remunerative market for fall fruit; that is, as a specialty. It is true our cities and larger villages consume large quantities of the early and later fall varieties, and farmers living near enough to market so that transportation is not great, can find ready sales for a limited supply of such apples. But easy and rapid transportation renders competition from apple growers in Massachusetts, New York and localities farther south, a matter of easy accomplishment, which makes the marketing of perishable fall fruit an unsatisfactory business as a rule. The lesson here is obvious—curtail production in this direction.

Again, a study of the markets, domestic or foreign, speaking in the broader sense as American and European, shows us that the valuable sorts of apples called for to an extent to create anything like fancy prices, may be numbered upon the fingers—we might almost say—of one hand. But what are the facts regarding varieties in the orchards of Maine to-day?

They are producing from twenty-five to one hundred varieties of fruit, and the mania for varieties still goes on. If the production of such a vast number of varieties of apples has been profitable in the past, it certainly will not be in the future; then, grow fewer varieties and those of long keeping, productive sorts, generally of a red color and of good quality as possible.

GOOD CULTURE.

Another consideration which bears a prominent part in treating this subject is the cultivation of our orchards. In view of the competition and consequent depression of prices in dairy products, arising from the bogus butters with which the country is pretty effectually greased, a prominent agriculturist said the other day, while lecturing to Cumberland farmers, "It behooves the dairymen of this country to keep better cows and take better care of them and then by enhanced production be enabled to cheapen production, or in other words sell more butter produced at less cost, and though sold for a less price, realize as much or more money—because the relative cost will be less—and drive the greasy imitations out of existence." In point of production the same rule applies to orcharding.

I think most who have given thought to the subject will agree with me, that one important thing that Maine orchardists need to give more attention to, is better cultivation of their orchards. The quantity of larger and smoother fruit is greatly increased by judicious cultivation, while the quality in other ways is enhanced thereby. Less trees and better cultivation, whereby larger returns with less expense are obtained, must be the watchword of the orchardist of the future.

LESS TREES AND MORE CULTIVATION.

The rule has too long been in practice with farmers to buy and set apple trees to the neglect of those already planted. The time has fully come when farmers should turn their attention to better

practice in caring for the trees they already have, rather than in multiplying their orchards. Said a good farmer and orchardist of Lewiston to us a short time ago, "Although apples are low there is more money in raising them at \$1.50 a barrel than in raising any other crop." "And," continued he, "if I was a young man just starting out on a good farm and could be assured of \$1.00 a barrel for all the good winter apples I could raise, I would go into orcharding as heavy as my circumstances would warrant, in preference to a general system of farming. I would make more money out of it." He recognized the fact that while the apple was on the increase, systematic cultivation and care in the selection of varieties and pruning and adaptation of varieties to markets, would bring good returns for many years to come, at least.

AN EDUCATED TASTE.

Another consideration we will mention, and one already touched upon in the last proposition, is the quality of the fruit produced. Our markets have become fastidious. This is so in relation to nearly every production of the farm. The class in our cities who are satisfied with the rubbish and second-quality articles in the markets is very small. The best is none too good, hence a good article is readily taken at prices ten to twenty per cent. above inferior articles, while the latter go begging for a market or perish on the dealer's hands.

Markets are fastidious as regards the eye. The looks of a thing goes a great way with a man when he buys articles for his mouth (with one or two exceptions). Handsome fruit and all of the same kind in a package will bring a good price in advance over equally as good fruit mixed several varieties together. We said to a groceryman on Main Street in Lewiston: "Can you sell a bushel or two of apples, sound and nice, but several varieties mixed together?" "Yes," said he, "we can get something for them, but they will sell for more to sort them over and sell each kind by itself. Somehow," he added, "customers don't like the looks of a mixed-up mess of anything, and they won't buy it readily."

MAINE FRUIT THE BEST.

And here it may be proper to remark that the Maine orchardist enjoys peculiar climatic conditions over most other portions of the country, enabling him to produce fruit superior, and hence appreci-

ated in market above apples from most any other part of the world. This is true of all the fruit grown in Maine. Her strawberries command the respect of the Boston market-men to the degree of two or three cents more a quart than those shipped hither from any other quarter.

From the recent issue of a Boston paper we cut the following:

"The supply of apples is large, and though asking prices are not materially changed, yet \$1.75 per barrel is about the top price for No. 1 Maine and New Hampshire Baldwins by the car-load. Very few Massachusetts Baldwins are worth over \$1.50, while common grades rule much lower. Without an export trade it would seem that the production of apples in the country was about equal to the demand for the same. There always seems, however, to be a healthy demand for the choice lots of apples, whatever the year may bring forth with poorer qualities."

THE SUBSTANCE OF IT.

There is this about it, then, Maine apples are going to sell if apples from anywhere do, and at better figures; also, the choice lots will always be in healthy demand whatever the state of the market for poorer sorts.

We know a methodical orchardist who makes a speciality of the Nodhead apple. We said to him a short time since, "You'll probably make your orchard net you a couple of dollars a barrel for your Nodheads this winter?" "Oh, yes," said he, "I sold them right off for \$2.60 a barrel." Comment is unnecessary.

To sum up, then, the orchardist in Maine who conforms his practice in line with the considerations we have named, has a future before him full of promise and hope.

IN THE LIGHT OF THE PRESENT.

In this connection let us consider the outlook for the fruit grower from the standpoint of orchard production and prices for the same the two past seasons. Maine has been blessed two years in succession with bountiful crops of apples. This has also been true of the apple-bearing sections of New England and New York. Foreign demand has been rather limited, and prices for fruit have ruled low. Orchardists, in view of this, have argued, we think, from false premises. They have seen in these two years' abundant crops and low prices, the dim foreboding of over-production and its direful

consequences upon the apple interest of our State. And the evil, apparently, is enhanced every year by the continued enlargement of orchards and setting of more apple trees.

We have said such argue from false premises. Why? In the first place, who are the consumers of fruit, and what are the conditions upon which our markets are based? The apple, unlike some other commodities that enter into the domestic cuisine, is both a necessity and a luxury. Considered in that connection, the wealthy will always have it if it grows, but with the poorer class, which includes the great mass of laborers, the apple under certain conditions comes to them as a luxury which can be dispensed with in times when labor is in excess of demand, and luxuries have to be relinquished.

During the last two years great depression has ruled in business. Labor has been in excess of demand, with the consequent low price for the same. Economy has been the watchword in the millions of homes to the exclusion of luxuries in living, indulged in in prosperous times when labor is all employed at fair wages. It is not consumption of the products of New England farms by the thousands of the wealthy class, which gives active demand and remunerative prices for the products of Maine orchards, or anywhere else, but the millions of mouths of the families of wage-workers which determines the price of Maine apples at home or abroad. With the thousands of London's laborers parading her streets and howling with the despair of starvation, is not an augur for quick sales or remunerative prices for Maine apples shipped to English markets. With our laborers living from hand to mouth on scanty work and scantier wages, the luxury of a constant fruit diet gives place to the sterner necessities of bread and clothing.

WHAT OF THE NIGHT.

The times upon which we have fallen are anomalous. Financial depression lies upon the whole business world. America is not alone in the low state of her business interests. The same is true of the countries of the Old World. A reaction is coming when business will revive, and the Maine orchardist will be happy. He can grow the best apples in the world, and he knows it. That he will always find a market for them at remunerative prices, the horizon of the future glows with roseate hues of promise. While the wheels of our manufacturing interests are in motion, with their goods finding their way to the homes of millions of consumers, making a

demand and a consequent call for labor to produce these goods, that commodity we call "money" will change hands and land a fair share in the Maine apple grower's pocket.

DISCUSSION.

After the reading of Mr. Abbott's paper a short time remained for discussion.

Mr. KNOWLTON, referring to the paper of Mr. Bennoch, read at the opening session, said: I think Mr. Bennoch meant the beetle instead of the borer; the mature insect instead of the larvæ. In warm, sunny days these perfect insects will come out. I speak of this, thinking that a misapprehension might go abroad in regard to the matter.

Mr. S. R. SWEETSER. I find a good ladder a very desirable thing to have in the orchard. I use one with a hook on the top end, and that ladder will stick in any tree that you can't reach from the ground.

Mr. H. L. LELAND. I do not know that I can add anything to the remarks already made. There is one thing, however, I would like to say, and that is, that our State is especially adapted to fruit growing while some other localities are not so favorably situated. We must have a standard apple. Many have tried to get one to take the place of the Baldwin, but they haven't succeeded as yet. I would suggest that the meetings of the Society, instead of being held in the centre of the State, be held in other sections, that the knowledge may be better disseminated. I would like to speak on small fruits, because I think they teach a useful lesson to every farmer in the State. And with a little attention every family could be supplied with fruit. Are the majority of them so supplied? I fear not. The larger number are dependent on nature for their small fruits. I would like to hear from Mrs. Knowlton, who can tell us about flowers. It is just as much a part of farm life to have flowers as to have fruit. With the cultivation of more flowers, our lives would become more refined.

Mrs. D. H. KNOWLTON. I might say a word on the arrangement of flowers for the table, as nothing so much contributes to the true appearance of a dinner table as a vase of flowers. One pretty idea is a hanging basket filled with flowers, suspended over the table. We have one at home suspended from the place where the lamp

hangs in winter, the table lamp in summer not being needed. I have seen a simple design of a saucer filled with small, choice flowers, placed on a corner bracket, that was very pretty.

MR. BOARDMAN. I will just say a word about flowers in the guest chamber. Nothing is more pretty or appropriate than to place a vase or saucer of flowers in the chamber where your guest, when you have one, is to pass the night. It is an evidence of thoughtful appreciation, of welcome and good cheer, quite as positive and as lasting in its effects, (showing your gladness at seeing your friends), as much as it is to set a good dinner before them. They speak a welcome quite as hearty as the words, "I am glad to see you." Arrange a little bouquet for your guest chamber, and see if it don't bear good results.

MR. SOLON CHASE. You are in one of the best apple towns in the State, and if you come here next summer you will find these hills covered with trees full of ripe and delicious fruit. In our own district we have a 1500-barrel orchard which represents the growth of thirty years. When I was a boy we raised apples and we began to eat them in the blow and ate them all the rest of the time. There is nothing so good for an apple as to eat it. We can't raise apples enough for our own people. There is no better apple in the world than the Baldwin, but you have to raise them in the proper localities. With me the Northern Spy is a better apple than the Baldwin.

MR. NELSON. I can talk a great deal better in my orchard than I can here. I have been somewhat engaged in growing Nodheads. There is only one trouble, it has no foreign market. The time is not far distant when there will be an over-production of fruit. In Boston there is more demand for the Ben Davis than for any other variety. One thought in regard to the naming of fruit. I remember some apples that I took to Brunswick which I thought were Pippins, and when the committee reported, they called them Gloria Mundi. Soon after a man came up and looked at them a moment and exclaimed, "Those ain't Gloria Mundi, they are Pippins." Now how shall I enter that apple at the next State fair—as a Gloria Mundi, a Pippin, or as a Gloria Mundi Pippin?

MR. ATHERTON. There is one question in fruit raising which I would like to have discussed. What shall we do with our cider apples? I had three hundred bushels this year and could not sell them at enough to pay the cost of picking and carting. My only alternative was to feed them out or to make them into cider. I decided

to have them ground up. Now, what is the feeding value of cider apples for our stock. I do not know, as I have never tried them, but would like for some one to tell me. Of course there is a moral side to the question of cider making which we must take into account.

After the passage of the usual complimentary votes of thanks, the meeting closed with singing by the Turner Grange choir.

This closed one of the most successful meetings the Society has ever held. The town of Turner, though somewhat far from rail communication to accommodate those who wished to attend from other sections of the State, is yet one of the best orchard towns in Maine, and its citizens were anxious that the meeting should be held in their midst. The citizens of the place were very kind and hospitable to all visitors; and the members of Turner Grange not only gave the free use of their hall for the meeting, but the lady members of the Grange also provided two abundant and finely served dinners, of which all visitors and those in attendance were invited to partake. This gave zest and good feeling to the occasion, and added much to the pleasure of the meeting. Although but little opportunity was had for discussion, yet this loss was compensated for in the number and valuable character of the papers presented. It is to be hoped that future meetings may be equally as profitable.

MISCELLANEOUS PAPERS.

FRUIT GROWING IN THE DIFFERENT COUNTIES IN MAINE.

Before writing his essay on the "Climatic Line of Fruit Culture in Maine," which appears in this report, the author, Mr. Atherton, addressed letters of inquiry to prominent fruit growers in different parts of the State, asking questions in regard to the varieties grown and the success attending their culture. The answers received contained much information which could not all be embodied in his essay, and Mr. Atherton has placed these letters in my hands, believing that they contain matters of experience and history regarding fruit culture in our State, sufficient to warrant their preservation in the transactions of our Society. I have, accordingly, carefully edited these letters, and present below what seems to me to be their most important contents. Their writers, as will be seen, are gentlemen of known prominence in connection with the pomological interests of our State, and this gives greater value to these county reports on fruit growing.

AROOSTOOK COUNTY.

There are portions of this county that are well adapted to orcharding, and other parts where apples cannot be profitably grown. I do not extend my sales above 14 miles north of here, for this is the very northern limit of orcharding except in some isolated spots where there happens to be an admixture of granite, potash, etc. Some of these detached positions are found in Mars Hill, Mapleton, Castle Hill, Perham, and even as far north as New Sweden, where apples may be raised in limited quantities for family use, but cannot possibly be made profitable.

There are places in this vicinity where it is almost impossible to make an apple tree grow, then there are other localities where all

that is required is to set out the tree and it will thrive if protected from cattle and mice; nearly the whole town of Linneus and Hodgdon, with parts of Houlton, Littleton and Monticello, are of this kind, with large portions of the county west and south of here.

There are a considerable number of natural orchards in Linneus. Hon. P. P. Burleigh has a large one which he is grafting into the choicest hardy sorts and some that are not very hardy, as an experiment. I wish all of his townsmen were as enterprising: it would add greatly to the wealth of the town.

As to varieties, I do not think the Baldwin can possibly be made to grow here. I canvass as far as 75 miles south of here and there is not a Baldwin tree as far north as that, to my knowledge, and there have been many set out. There is in the town of Springfield, 67 miles south of me, a tree that has some Baldwin scions on it that were sent from the Kennebec, which have borne some, but for some cause they do not ripen and turn red, but look green and are insipid. This is probably owing to our cool summers and few hot days. It is out of its proper latitude; in other words, if you could raise a Baldwin apple tree here you could not raise a Baldwin apple upon it.

We can get along very well without the Baldwin, as we have other apples equally as good and perfectly hardy. The Wealthy has been thoroughly tested here and found to be perfectly hardy, very thrifty and productive, and, I think, better flavor than the Baldwin; will keep as long when raised here, but is not as solid in flesh. It is a handsomer apple than the Baldwin and I do not see why it will not sell as well.

I now and then see a Northern Spy here, but the fruit buds are tender and winter kill so no fruit appears on the tree, in fact scarcely a blossom.

The Rhode Island Greening, Bellflower, Bethel, Gravenstein, Rambo, Twenty Ounce, Spitzenburgh, King of Tompkins County, Peck's Pleasant, Walbridge, Pewaukee, and many others that do well on the Kennebec will not stand our winters.

Our leading varieties are the Tetofsky, Red Astrachan, New Brunswick, Duchess, Alexander, Fameuse, Wealthy, Blue Pearmain, which after a thorough trial have proved reliable and profitable. The following are not the leading yet are good hardy varieties: Summer Harvey, Sops of Wine, Williams' Favorite, Canada Baldwin, Haas, McIntosh Red and Golden Pippin; also, Bloom, Alterton, Gideon and Magog (which are new varieties) have done well so far.

The Wealthy has done well here on nearly all kinds of soil and treatment; we have not a hardier or more thrifty tree on our list; the Gideon does not thrive on a deep or sandy soil. Fameuse is hardy, is a garden tree, needs to be cultivated and well dressed in order to produce fair, nice fruit; but after all these varieties have been admired and commended and placed in their proper leading place in the list, then, standing out ahead and alone without a peer, is the New Brunswick, bearing a very heavy crop every year, making the whitest and best flavored dried apple, easily cooked, with flesh as white as flour.

E. W. MERRITT.

Houlton.

FRANKLIN COUNTY.

There is no material difference in the climate of the settled part of Franklin County and that of Cumberland and Kennebec. We have more snow here and it lies on later in the spring, but the frost is usually out of the ground when the snow is off and vegetation immediately starts. Apple trees in this vicinity blossom a full week earlier than on some soils nearer the coast—say on Walnut Hill, where I have particularly noticed it. Some late-growing varieties, as the Spy, attain their growth a little earlier near the coast, as in the more southern portion of the State, than here, I have noticed. All varieties that will mature in any part of Maine will mature in Franklin, as far as climatic influences are concerned.

The Baldwin grows in great perfection in this part of the county if put upon high land, and it succeeds well in Kingfield, Phillips, and fairly well in Madrid. In the Dead River Valley and the Lake regions apple raising is in much the same condition it was here fifty years ago, nearly all natural fruit which produces fairly well, but I doubt if any but the most hardy varieties could be grafted into those regions with much prospect of success.

If you wish to set definite bounds of the northern limit of culture, I should say a line drawn somewhat south of Mts. Abraham, Bigelow and Saddleback. The leading apple in this county is the Baldwin. The leading varieties are Baldwin, Northern Spy, Rhode Island Greening, Fameuse and Talman Sweet, for winter apples, and almost all the kinds you ever heard of for summer and fall use—but it is not profitable to raise the latter here, except what are required for family use.

I will say the Roxbury Russet does not succeed well with me, and it is the general complaint; but I think owing more to the soil than the climate. I esteem high, granite land the best orchard land in this county, particularly for the Baldwin, and the thicker the boulders upon it, the better the tree will thrive. The next best is the schistose soil. You will remember that is the kind upon which my orchard stands. I have given my Roxbury Russets the best of care, but my Baldwins out-bear them ten to one, and I am satisfied that my soil is no place for them and shall graft a part of them to Baldwins next spring. Franklin County apples have the reputation in the markets of being of fine flavor, well colored and late keepers, and most of our winter varieties attain a large size.

S. R. LELAND.

Mt. Baldwin Farm, Farmington.

HANCOCK COUNTY.

Fruit culture is not pursued in Hancock County on such a scale as in Kennebec or any part west of the Penobscot River. Occasionally the crop of apples is insufficient for home consumption, and winter varieties are brought from Boston, but generally there is a small surplus for export. Orchardists do not appear to have studied the market much, and the list of varieties raised, though a long one, consists largely of varieties little known abroad.

I think there are more Baldwins raised in this vicinity than any other sort; though just across the river to the westward Bare-Limbed Greening takes the lead. The Baldwin is not, however, so well suited to the climate as to that of Kennebec, and does not attain such perfection. The tree appears in general hardy enough.

In the old orchards you will find the Yellow Bellflower, Kilham Hill, Nodhead, Blue Pearmain, Mathew Stripe (or Martha Stripe), a very sour winter apple; an old-fashioned russet, something like Roxbury, Hunt Russet, Stone Sweet (a hard winter sort), Queen's Pocket (winter), Lyscom (September; also known as Mathew, or Martha Stripe), Hightop Sweet, Williams' Favorite, Golden Russet (early), Leland's Golden Pippin, Bell's Early, and a long list of obscure sorts, mostly unnamed.

In the younger orchards are Wagner, Northern Spy, King, Golden Russet of Western New York, Red Astrachan, Duchess, Gravenstein, Fameuse, Ben Davis, etc. First four appear to give satisfaction; also, Fameuse and Gravenstein. King is praised by growers;

Wagner also. Ben Davis is condemned. My own observation warrants a high place for Hunt Russet and Golden Russet; both exceedingly productive, and of good flavor, and good keepers. Black Oxford is praised, but not much raised. I speak only for Bucksport and other towns adjoining, on the river about its mouth. In the interior of the county they might tell a different story.

We have a great deal of foggy weather here, being just at the head of Penobscot Bay; and often cool and damp here when dry and warm in Kennebec. I think the weather affects the quality of the fruit. Flavors are not so sharp as with you. Hunt Russet on my farm in Manchester is more acid than I like to eat; here, just right. Northern Spy is insipid compared with those grown in Manchester. Bellflower and most others not so good. Colors also less bright here, generally. As to form, I have observed no difference.

CHAS. G. ATKINS.

Bucksport.

KENNEBEC COUNTY.

The trees in my Greening orchard came from New York. The distance apart is 24 by 24 feet, but they ought to have been 30 feet, as the branches nearly touch now. I am quite sure it was seventeen years last spring that they were set. The land, previous to setting the trees, had been in pasture a great many years, and several inches of the surface soil was made land from the wash of the road above, which added very much to the fertility of the land. For several years after setting the trees I cultivated the land, planting with potatoes and beans. It was then seeded to grass. I have mowed the grass each year and put it around the trees; in addition to this I have used a good amount of swale grass with which to mulch the trees; but the last few years I have manured it in alternate years, spreading it evenly over the whole surface.

A large part of the land where my old orchard was set was made land, washed from the Seminary hill above (in some places ten inches deep), and I find it has the staying qualities in it. On all of my orchards the land was stony and rather moist, but not wet.

From the experience I have had in orcharding, I am fully convinced if we wish to raise large crops of fair fruit we must keep up the fertility of our orchards, so that the trees will make a good growth and bear a good crop of apples at the same time.

J. W. SMILEY.

Vassalboro'.

LINCOLN COUNTY.

Apples, pears, plums and grapes can be successfully grown in every town in Lincoln County. The Baldwin is the leading apple grown. The leading varieties of apples are Red Astrachan, Early Harvest, Bell's Early, Duchess of Oldenburgh, Fameuse, Gravenstein, Porter, Orange Sweet, Winthrop Greening, Jewett's Fine Red, Somerset, Hurlburt, Talman Sweet, Granite Beauty, Foundling, Baldwin, Rhode Island Greening, Yellow Bellflower, Northern Spy, Golden Russet, Hunt Russet, English Russet, Fall Pippin, King of Tompkins, Wagener, Ben Davis and many others.

The apples and other fruit grown in the seaboard towns are much smaller in size, and more backward in season, than fruit grown in the interior of the State, therefore would not command as good a price in Boston market; yet fruit can be successfully and profitably raised in this county. The soil is well adapted to fruit raising, and the climate does not injure our trees, as the tenderest varieties are perfectly hardy. I propagated more than one hundred varieties of apples, and I have not lost a tree, after it had started one year, for ten years. Some ten years ago I lost half a dozen nice trees one winter; since that time I have not had a tree winter killed. The orchards that are situated on high land inclining east or south have done the best. The cold, damp winds and fogs from the ocean, during the summer months, is the reason our fruit does not attain the size of the fruit grown in Kennebec and Androscoggin counties; but we can enrich our orchards with sea manures, such as rockweed, seaweed, mussels, kelp, etc., at a less expense than can the farmers of the inland towns, and trees mulched with sea dressing are not troubled with borers. For the past three years there have not been but two borers discovered in my orchard.

H. J. A. SIMMONS.

Waldoboro'.

OXFORD COUNTY.

I think the leading apple for Oxford County is the Baldwin. The leading varieties would be named in this order: Baldwin and Rhode Island Greening for winter; and Snow, Gravenstein and Hubbards-ton Nonsuch for fall. Fruit can be successfully grown as far north as Bethel and Andover, and finally, in fact, almost anywhere in Ox-

ford County. Other fruits, like pears, plums and grapes, are grown, but I think pears are not a success with us. Climate has no ill effect on fruit growing here. Our soils in this county are mostly gravelly loam and what would be called rough, rocky, uneven land. It is natural fruit land; still we need fertilization, and have got to have it in order to get the best results from the orchard. We have here, as everywhere else in Maine, too many varieties, and many orchardists are now grafting over into Baldwins.

C. H. GEORGE.

Hebron.

I have over seventy different kinds of apples, but the McLellan stands at the head, as far as beauty and profit are concerned. The trees are very hardy, good growers, form a very handsome top, bear abundant crops of smooth, sizeable, handsome apples, free from black blotches and other defects that damage the apple crop. I have an orchard set nine years ago last fall, in which there are forty-five McLellans. Last fall I gathered from those trees seventy barrels of nice apples. The orchard was set on new ground, which is a rocky side hill, cants to the southeast, and has been pastured with sheep ever since they were set. I do not know their origin, but had the scions of Thomas Wright of Strong, eighteen or twenty years ago, for Nodheads. I have had them on exhibition at the fairs for several years. They always attract considerable attention, and I have never seen them exhibited by any one else.

The Baldwin is the leading apple here and succeeds well on high land, but often fails on low or river land. The common varieties of apples can be grown successfully as far north as the towns of Weld, Temple, Phillips, but fail to do well farther north, though some of the iron-clad varieties have been grown with fair success at Rangeley, which is about forty miles farther north. We succeed in growing pears, plums, cherries, grapes, and the various kinds of small fruits, though they do not do as well here as they do farther south. I think climate affects our fruit crop more than the soil, though the climate is as uneven as our section of country is; the temperature varies from ten to twenty degrees within a few miles. Orchards do best that are well elevated, much better than on low land.

J. J. TOWLE.

South Carthage.

PENOBSCOT COUNTY.

Here in Bangor, although the grafting of thrifty young trees at the ground with Baldwins or Roxbury Russets often results in winter killing the first winter, yet grafting in the limbs proves a perfect success, and I shall re-graft many of my early apples to Baldwins and Northern Spies.

As to the northerly limit of the Baldwins, fair specimens of that and the Greening are raised in the northerly tier of towns in this county—twenty miles north of this city—viz: Bradford, Charleston, Garland and Dexter. Crossing the county line to Sangerville and Dover, Baldwins are still found in limited numbers, and extend to Foxcroft, the residence of our venerable and successful pomologist, Calvin Chamberlain, Esq., who speaks of the Baldwin in his locality as being more suitable for cooking than eating, which statement can be fully appreciated by comparing one of these with one raised in the southerly part of the State.

As to the other standard varieties, I cannot think of any in the Society list, but are raised in towns north of Bangor—the Hubbardston Nonesuch even being raised by Mr. Chamberlain for a leading variety. Several orchardists agree with me in the order named: Baldwin, Rhode Island Greening, Yellow Bellflower, Duchess, Red Astrachan and Talman Sweet; also many Northern Spies, Porters, Pearmains, Gravensteins and King Sweets.

The other fruits beside apples are standard pears of the best varieties, the number increasing yearly; plums and cherries, the latter largely reduced by black knot. Many young plums are set annually, also strawberries, raspberries, blackberries, grapes and currants. The old bushes of the last named have been largely destroyed by the currant worm and neglect of cultivation.

In answering the question, "Does climate or soil affect our fruit most?" I will say that although fruit in our county is no exception to the general law of combined influences produced by both climate and soil, and notwithstanding our variety of soils, comprising gravelly, sandy, loamy and clayey, the soils are generally adapted to our varieties of fruits; and my opinion is that the effects of climate predominate over those of soil in its influence on fruit in our county. As to what determines varieties, climate or soil, the superior quality of the Roxbury Russet grown in the vicinity of Mon-

mouth, where the soil abounds in iron, and the superiority of a Yellow Bellflower, Northern Spy or Nodhead raised in deep, rich soil, as compared with those varieties raised on a thin, poor one, are familiar illustrations of the influence of soil on varieties. The fine flavor of a Baldwin or Spitzenburgh grown in Western New York, as compared with that of the same varieties grown in their northern limit in Maine, as also the change of early or fall apples into winter, and *vice versa*, as shown in different latitudes, afford proof of the still stronger influence of climate, so that in view of the above facts, I conclude that varieties are influenced by both climate and soil.

SAMUEL C. HARLOW.

Bangor.

PISCATAQUIS COUNTY.

The Rolfe apple is a fall apple and will not keep and hold its flavor later than January. It is a superior apple and leads all other varieties in its season in Piscataquis County. Tree hardy and a good bearer. The northern limit of successful apple culture in Piscataquis is the boundary of the "forest primeval." A tract extending along the line of the Piscataquis River eight or ten miles in width includes nearly all the cleared land, and these hill lands are good orchard lands. The number of varieties are almost unlimited. The most valuable varieties include Astrachan, Hightop Sweet and Duchess for early use. For fall—St. Lawrence, Rolfe, Winthrop Greening. Early winter—Famense, Nodhead. Winter—Hurlburt, Hubbardston Nonsuch. Late winter and spring—Rhode Island Greening, English (Poughkeepsie) Russet, Talman Sweet, Black Oxford. The Baldwin is grown but is not reliable; tree not quite hardy, and fruit does not fully mature.

There is not much done in growing pears or plums, partly through indifference and more largely from the fact that plums and cherries are injured by the black knot. Grapes are grown but are uncertain to mature.

H. L. LELAND.

East Sangerville.

You ask of the possibilities of fruit culture in Piscataquis County. When we consider, as we must, that Maine is a State of "magnificent distances," and that Piscataquis, although not the largest of her counties, is three times as large as the State of Rhode Island,

one-third larger than Delaware, and two-thirds as large as Connecticut; that it lies wholly north of latitude forty-five degrees, and stretches away its sixteen townships in length by seven in breadth, to the northward more than a degree and a half, we must realize that it is pretty well up in the "cold north," although the territorial centre of the State falls within the township of Bowerbank in this county, and Lake Sebec occupies its almost exact geographical centre. But as only an average of the first four southmost ranges of townships are settled, that territory is usually understood to be "the county" when treating of this subject. We are north of all the settlements of Oxford and Franklin, and of the larger part of those of Somerset.

I regard the northern limit of the surely successful cultivation of the Baldwin apple to be the very high range of hills running easterly and westerly through the towns of Charleston, Garland and Dexter, and being very nearly the southern boundary of this county. Baldwin apples are, however, grown on high ridges by grafting in the limbs in this county. I own an old orchard on a high ridge back of this village, that contains some old trees grafted to Baldwins and other kinds, I believe, by that veteran orchardist, Calvin Chamberlain, Esq., probably between thirty and forty years ago. They are, of course, now going to decay, as are the others; but still yield the Baldwin for family use. Some of these we have kept until the Fourth of July.

The ordinary varieties of apples (except the very tenderest) are successfully grown in the settled portions of the county, and I know no reason why Dr. Hoskins' list for the north could not be grown anywhere in the northern portion.

H. A. ROBINSON.

Foxcroft.

All of Piscataquis County lies north of forty-five degrees parallel of latitude, with possibly a part of the town of Wellington excepted. Prof. M. C. Fernald, with some students, made an observation at this village some years ago, but I do not remember the odd minutes as they found; but if you wish for exactness, probably Prof. F. can give it. If you should be looking for altitude as bearing upon fruits I can give you, as shown in the survey of the R. R. crossing my place, the most of my orchard and garden as very nearly four hundred feet above the tide at Bangor. I am forty rods from Piscata-

quis River and about fifty feet above it. Departing from the river on either hand, many of the best apple orchards are found from two to four miles away, and two to four hundred feet of altitude above.

Several of your questions may be found answered directly or otherwise in what I may say from observation concerning the Baldwin apple. I know of no apple so changed and so variable through conditions apparent or not, as this. This fact has all the way been so observable that many people now believe that there are several distinct Baldwins—a family of them—and are spoken as the red or the yellow. It is grown in small quantity here but can hardly be called successfully. More than thirty years ago a friend in Medford, Mass., knowing my then zeal in obtaining good fruit, sent me a barrel of Baldwin apples to show that he had a tree producing the best fruit known under that name. I went to that tree for the purpose of taking scions, and found it standing on the outer edge of an embankment of the old Middlesex canal—then abandoned and the water withdrawn. I saw that its superior location could fully account for its reputation. The drainage was perfect. The old surface soil long covered by the mixed earth of the embankment, all together within easy reach and bearing very little of other vegetation, presented plant food in excess of demand. I took scions and set them in my nursery. Near that time, Mr. S. L. Goodale made his first visit to my place and there made the remark, in his forcible manner, that I had the best soil for a nursery he had ever seen. Now for results. My nursery had the best of care, but not a Baldwin ever came to condition to be placed in the orchard.

Large numbers of well-grown Baldwin trees were brought here from Massachusetts and other States many years ago and they very rarely lived to produce fruit. Some trees in the older orchards upon the hills have had their tops changed to Baldwins—I have done some of it myself—and some of these still live, but yield a fruit that would be passed as inferior at Hallowell. I consider this variety to be estopped by climatic influences alone, at or a little below the 45 degrees of latitude. Climate undoubtedly here affects fruit much more than soil. Unfavorable soil may be considered as confined to the narrow limits of stiff clay.

You ask for our leading varieties. I cannot answer. We have people here who are able to exhibit thirty or forty varieties from a not very large orchard. I could do it myself. The late tendency is towards the introduction of the claimed “iron-clads” or extra

hardy trees. This course is adding several new varieties, to which I have given little attention. I am often in the way of seeing our apples as they circulate in the home market through the village groceries, where the old varieties are not crowded out. The Hubbardston Nonsuch, Jewett's Red (Nodhead), Blue Pearmain, Black Oxford, the Greenings, English Russet, Red Canada, Yellow Bellflower, Northern Spy, &c. In late fall and early winter, the Rolfe is seen on the increase. I have lately seen some good Tompkins County King. The Fameuse is on the increase and deservedly so, as they continue with me in fine condition to the present writing.

The every-day inquiry is for a good winter apple for market. We have so many kinds, and consequently produce so few of any one, that it is not easy to gather in a single, uniform carload for a distant market. This state of things does not promise to be soon improved.

I think it is generally conceded that an apple grown near its northern thermal limit is at its best in quality as well as its keeping habit; but this thermal line or boundary to a fruit is not usually found in narrow, well defined limits, and has no respect for lines of latitude. It is a good thing to talk about, but, like the rainbow, distant neighbors don't see one and the same thing.

For summer apples Red Astrachan and Duchess are most grown. Duchess trees have been set in too great numbers, producing as it does with certainty such enormous crops. The last crop in and near this village could not all be sold and used. If picked before ready to fall and put in the cellar, its season for use can be extended two months or more. The Red Astrachan appears to be a general favorite over a large portion of our country. I spent the months of July and August, 1884, between the valley of the upper Mississippi and Massachusetts and passed over much of the intervening country at the season of early apples, and saw very few beside the Astrachan.

In answer to your question, "What other fruits do you raise?" I can say that pears succeed as well as apples, and an increasing interest is seen in their production. One variety—the good old Flemish Beauty—does better here than with you. Our last crop was abundant and very fair. We were once well stocked with plums and cherries; then a change came and the trees went out with the black knot. Some recent attempts, rather timidly made, towards a restoration go to prove the presence of the same old scourge. Most of the small fruits succeed as well here as anywhere in the State, with perhaps the single exception of grapes. The success of this desirable

fruit, more than with others, is weakened with each mile added to its removed distance from its sunny habitat.

With some fair crops many years ago we were encouraged to continue the trial of new varieties, till my list exceeded thirty; and my neighbor, Dr Robinson, has gone to a much higher figure,—being a younger man with a younger enthusiasm. Though but half a mile distant, his location proves less favorable, he having repeatedly been hit by spring and autumn frosts from which my place has been exempt. From his *experiment station* he can beat me when we report failures.

CALVIN CHAMBERLAIN.

Foxcroft.

WASHINGTON COUNTY.

The Baldwin is grown here to only a very limited extent. Some orchardists do not grow it at all; others have from one to six trees. Some say that it is a good bearer, but my experience is that young trees, at least, are very thin bearers, probably by reason of the buds being winter killed. There is no leading apple in the sense that the Baldwin is the leading apple in your section. There is more, probably, of the Allen (which I think probably is a synonym of Golden Pippin) grown here than of any other one variety. Also, for early apples, a good many Red Astrachan, Duchess of Oldenburgh or New Brunswicker, and some Alexander. As leading varieties, I might add Harvey Sweet (probably this is what is described in the books as Sweet Harvey), Yellow Bellflower, Fameuse and Ben Davis. Such kinds as Hubbardston Nonsuch, Colvert, Wealthy, Scott's Winter, Magog Redstreak, Talman Sweet, Northern Spy, Oxford Russet and many other kinds flourish here; but such as Williams' Favorite, King Sweeting, Primate, King of Tompkins County, Porter, etc., are rather tender.

Several varieties of pears appear to be hardy here, but all or nearly all are tardy bearers. There are, as you must be aware, varieties of fruit which require particular soils, and others which require a mild climate; so I can give no general answer to this question. I think climate affects the quality of fruit more than it does the form or color. I have seen favorable seasons when the Ben Davis was a good apple, but it is usually poor, though good looking. Several varieties of apples are better on dry soils than on wet.

The questions I would ask are in regard to sweet apples. King Sweeting is with me good enough in quality, for a very short time, but bears only every other year, and is rather tender. Early Sweet Bough is good, but not a heavy bearer. St. Johnsbury Sweet not quite as good and a poor keeper. Garden Royal might pass for a sweet apple, but is not a constant bearer. Talman is fairly productive and a good keeper, but requires to be baked before it has a good flavor. Have not yet myself tried the Harvey Sweet, but intend to do so and hope to find that one a good sort. Do you know of any earlier and later sorts which are of good quality to eat raw and good bearers? I would be glad to have some one answer these questions.

I came near forgetting to answer one of your questions. You ask me how far north of here our leading apples grow. Sixteen years ago I grafted some trees seen along the road to Presque Isle. I have not been there since, nor have I heard from many of them. I have, however, learned that they have fruited at Presque Isle and have kept till June, but are too tender to be of much account. I saw some very nice ones at Calais, said to have come from Houlton—too ripe to keep longer than an early winter apple, which is about what they have, averaging in keeping qualities till about March.

HENRY A. SPRAGUE.

Charlotte.

YORK COUNTY.

My knowledge is confined to a few of the northern towns of this county; but, as these are all well adapted to fruit culture, what I may say may perhaps apply to the county as a whole. In answer to your first question: "What is the leading apple grown in your county?" I would say the Baldwin is a long way ahead, and is gaining in popularity, on account of its excellent qualities as a shipping apple. Shippers prefer it to any other. It is also as productive as any and more so than many kinds. Other profitable and leading varieties are Sweet Bough, Red Astrachan, Williams, Porter, Nodhead, Pound Sweet, Hubbardston Nonsuch, Rhode Island Greening and Roxbury Russet. Many other kinds are raised and have more or less of merit, as Cole's Quince, Golden Sweet, Gravenstein, Mother, Benoni, Foundling, Talman Sweet, Duchess of Oldenburgh, Snow, King and Golden Russet. Many new varieties are being palmed off on the farmers by tree agents, they claiming great

things for them which are not realized when they come to bear. There is no limit, on account of cold, to fruit culture in this county. Unsuitable soil, in certain sections, is the only hindrance that I know of. A good many apple trees are being set every year and the quantity of apples shipped from this section is rapidly increasing. Query—Shall we overdo the business?

Some ten years ago or more, many pear trees were set which grew so thriftily that hopes were entertained that they might be made profitable and consequently large orchards of them were set in the town of Newfield. These trees flourished well for a while and began to bear some, when the blight began to appear, which has blasted the hopes which were raised. Grapes are grown to quite an extent at Newfield. Plums are being planted considerably and of late years have not been affected with black knot so much as formerly. Most of the small fruits do well, but are not grown to any great extent.

F. B. GUPTILL.

Cornish.

THE McLELLAN APPLE.

By DR. T. H. HOSKINS.

The McLellan apple was highly recommended to us, some eighteen years ago, by Dr. E. C. Worcester of Thetford, Vt. The tree is a good grower and pretty hardy, yet not sufficiently so for our exposed locality. Wherever the Westfield Seek-no-Further will succeed, the McLellan may be planted. The origin of this variety was in Woodstock, Conn. The tree is a fine, upright grower, and makes an excellent and healthy orchard tree. The young shoots are of a dull, reddish-brown color, and slightly downy. The fruit is medium, or above, in size, roundish, very regular and fair, color yellow, with a good deal of red in stripes and splashes. Stalk short, in a deep cavity. Basin shallow, with a small, partly-closed calyx. Flesh white, tender, vinous, juicy, very good to best. The McLellan can be grown considerably north of the Baldwin line, and is an excellent keeper. As it is a heavy annual bearer, it needs good land and liberal manuring, but it pays well for it.

A CHOICE OF APPLES.

By CHARLES DOWNING.

Apples are the most valuable of fruits, and the varieties named below are all good for family use. A tree or two of each kind, well cared for, will give a supply from July to June, and a month or two longer with a little extra pains :

- | | |
|-------------------------|---------------------------|
| 1 Early Harvest, | 12 Rhode Island Greening, |
| 2 Red Astrachan, | 13 Melon, |
| 3 Fanny, | 14 Sutton Beauty, |
| 4 Primate, | 15 Baldwin, |
| 5 Jersey Sweet, | 16 Grimes' Golden Pippin, |
| 6 Porter, | 17 Jonathan, |
| 7 Peach-Pond Sweet, | 18 Northern Spy, |
| 8 Fall Pippin, | 19 Newton Pippin, |
| 9 Mother, | 20 Lady's Sweet, |
| 10 Hubbardston Nonsuch, | 21 Red Russet. |
| 11 Bleheim Pippin, | |

For those who raise especially for market, varieties should be selected that succeed best in the locality, which may be ascertained by inquiry of those who make orcharding a business and know the kinds most in demand in the markets they supply. Experienced growers for market say that a few sorts rather than many give the most profit. For small gardens a few varieties grown as dwarfs on the paradise stock will supply a moderate family during the summer and autumn, for culinary uses and eating ; Nos. 1, 3, 6, 7, 8 and 9 are good varieties for this purpose. Winter apples can generally be purchased more readily than summer and fall kinds.

PLANTING APPLE TREES IN THE COLD NORTH.

From a lengthy paper read before the Ontario Fruit Growers' Association, by A. A. Wright, of Renfrew, the following paragraphs are taken, as bringing out a peculiarity of planting. The reader will readily see what kind of soil he has to deal with :

Doubtless it may be considered useless to tell any one that it is unwise to plant even a single tree, much less a large number, until the ground has been thoroughly drained and properly prepared for their reception.

A few words as to the best method of preparing the soil might not be out of place here, nor unacceptable to the beginner. So far as my own experience goes I have found the best results by first plowing the land up into ridges, so that the center of the ridge shall occupy the place where the trees are to stand. Then plough the land again in a cross direction, thus dividing it into squares, in such a manner that the center of each square will mark the place for planting the tree. A series of high knolls will thus be formed so that if the work be well done the land will be quite effectively surface-drained at least.

It is by no means objectionable to proceed in this way on any kind of soil; but it is absolutely necessary that it should be effectually done on anything approaching to a heavy clay.

Your knolls having been thus formed sufficiently high, preparations should be made to prevent the roots of the tree from going too deep into the ground, otherwise when the heaving of the ground, which the frost invariably causes, takes place, the descending roots will be torn asunder, whilst those which find a place near the surface and spread themselves out sideways from the tree will largely escape injury.

To prevent this downward tendency of the roots, the Jesuits and the original French settlers on the island of Montreal invariably placed a large flat limestone under each tree, and this was found to accomplish the desired object as the roots could not, of course, penetrate the stone, and on reaching it would turn outwards and grow in a lateral direction from the tree.

But these large masses of stone are not always available in every locality, and even when they are, they are cumbersome and heavy to handle.

The following has, however, been found an excellent and effectual substitute: Take the trunk of a pine tree, say about two and a half or three feet in diameter, and from this saw off blocks from three to four inches in thickness, placing them so that there will be one about eighteen inches deep under each tree when planted.

These are easily procured, readily handled, and appear to answer the purpose for which they are made, quite as well as the stone; the pine wood when placed under the ground and away from the action of the air enduring a long time, and is quite effectual in giving the desired direction to the roots of the trees.

THE FRUIT CATALOGUE.

It has been ten years since the Fruit Catalogue of the Society has appeared in the annual report, the last revision having been made at the Winter Meeting of the Society held in February, 1886. The original list was modeled with much care, and its preparation involved a good deal of work. But however correct and good a guide a list of fruit might have been for 1876, the same becomes somewhat obsolete for 1886, as relates to the small fruits, especially the whole list of berries. The Executive Committee of the Society felt that it was time to have the list again appear in our Transactions. Even if it was published in the form of its last revision, it would serve to bring it to the attention of our members and lead to its ultimate perfection. As there was no opportunity to revise the list at the time of the meeting at Turner, the Executive Committee decided to allow the Secretary to send proofs of the Catalogue to the members of the Fruit Committee and leading growers in the several counties, for corrections, such corrections to be embodied in the list. This has been done and the few changes that appear are the result of this action of the Committee. In general there have been few changes in the list of apples, the chief revisions occurring in those divisions relating to the small fruits. Under this action the Secretary, and not the Society, is responsible for the changes. The list will be found to be somewhat modernized by this course, while its authority, in the main, has not been lessened. Its publication now, after an interval of ten years, will at least direct attention to whatever errors it may contain, and to have these errors pointed out and corrected is one object in publishing the Catalogue. Corrections to it are invited from all fruit growers in the State.

Catalogue of Fruits for the State of Maine.

Plan of the Catalogue.

The names of varieties are given according to the nomenclature adopted by the Society, which is substantially that of "Downing's Fruits and Fruit Trees of America." A few leading synonyms are given, and these are placed in italics immediately under the name adopted by the Society.

The State is divided into three divisions, designated as the Northern, Central and Southern divisions.

The Northern Division embraces Northern Oxford, Franklin, Northern Somerset, Piscataquis, Penobscot and Aroostook counties.

The Central Division embraces Southern Oxford, Southern Somerset, with Androscoggin, Kennebec, Waldo, Hancock and Washington counties.

The Southern Division embraces Cumberland, Sagadahoc, Lincoln, Knox and York counties.

The explanation of the abbreviations and signs used in the several tabular columns is prefixed to the list of varieties in each of the respective classes of fruits.

Cultivators are requested to note carefully any errors which may be found in the catalogue, or any well-founded opinions derived from their observation and experience differing from the conclusions therein indicated, in order to report the same at future meetings of the Society, with the view to make the catalogue as nearly perfect as possible.

I—APPLES.

EXPLANATION OF ABBREVIATIONS AND SIGNS.

In the column of "Size" l. stands for large; m. for medium, and s. for small. In the column of "Quality" b. signifies best; v. g., very good; g., good, and p., poor. In the column of "Use" C. stands for cooking; F., family use—cooking, baking, etc.; D., dessert, and M., market. In the column of "Season" S. signifies summer; E. A., early autumn; A., autumn; L. A., late autumn; E. W., early winter; W., winter, and Sp., spring. In the columns devoted to the several divisions, h. r. signifies highly recommended; r., recommended; †, not recommended; ?, introduced but not fully and extensively tested; blank, nothing reliable known of the variety in the division under which such blank is found.

It should be borne in mind that any recommendation is for the special use designated in the column of "Use."

CATALOGUE

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
1	Alexander.....	l.	p.	C.	A.	h. r.
2	American Summer Pearmain	m.	b.	D.	E. W.	.....
3	American Golden Russet	s.	b.	D.	E. W.	.....
	<i>Golden Russet.</i>					
4	American Golden Pippin	m.	v. g.	.....	W.	.....
5	Baldwin	m.	g.	M.	W.	†
6	Beauty of Kent	l.	p.	M.	W.	.....
7	Benoni	s.	v. g.	D.	E. A.	r.
8	Black Oxford.....	s.	g.	.....	L. W.	r.
9	Blue Pearmain.....	l.	g.	M.	W.	.....
10	Brigg's Auburn.....	l.	v. g.	D.	A.	.....
11	Canada Reinette	l.	v. g.	M.	W.	h. r.
12	Cole's Quince	l.	b.	D.	E. A.	h. r.
13	Congress	l.	g.	M.	A.	.....
14	Danvers Winter Sweet	m.	g.	F.	L. W.	.....
15	Dean.....	m.	b.	D. C.	A.	h. r.
	<i>Nine Ounce.</i>					
16	Duchess of Oldenburg	l.	p.	C.	A.	h. r.
17	Early Harvest.....	m.	v. g.	D. C.	S.	†
18	Early Strawberry	s.	v. g.	D.	S.	.....
19	Early Pennock	m.	b.	D.	A.	.....
20	English Sweet	m.	v. g.	M.	E. W.	r.
	<i>Ramsdell's Red Sweet.</i>					
21	Esopus Spitzenburg	m.	v. g.	M.	W.	†
22	English Russet.....	m.	g.	M.	W.	r.
23	English Russet	s.	v. g.	M.	Sp.	.....
	<i>Poughkeepsie Russet.</i>					
24	Famense	s.	b.	D. M.	E. W.	h. r.
25	Fall Harvey	l.	g.	M.	L. A.	r.
	<i>Harvey.</i>					
26	Fall Pippin	l.	v. g.	M.	E. W.	r.

OF APPLES.

Number.	Central Division.	Southern Division.	REMARKS.
1	†	†	Hardy, productive, and showy. Succeeds well in high latitudes.
2	.....	.....	Not extensively grown. Limited trial proves well. In Kennebec reported a good bearer.
3	r.	r.	Excellent dessert apple. Prolific. Several varieties are erroneously grown under this name.
4	.....	?	An old variety. Never extensively tried in this State.
5	h. r.	h. r.	Hardy—Should be planted on well-drained land.
6	?	?	
7	r.	r.	Highly recommended by many.
8	†	†	Hardy and productive—inclined to overbear. Not good for cooking, hence not popular in market.
9	r	r.	Reported by some to succeed well in Northern Division.
10	r.	.....	A native of Androscoggin County. Popular whenever tried.
11	.....	.....	Hardy. Succeeds well where tried in Aroostook County.
12	r.	r.	Two varieties are grown in Maine under this name.
13	r.		
14	†	†	A late keeping sweet apple—not very popular. Has been generally superseded by other varieties.
15	r.	?	A popular apple wherever known. Productive.
16	r.	?	Hardy in Northern Division. For extreme north cannot be too highly commended. Claimed by some to be a distinct variety—a seedling of Duchess of Oldenburg.
17	r.	r.	Under good cultivation one of the most desirable early apples. Quite tart unless fully ripe.
18	r.	r.	
19	h. r.	.....	One of the most popular in market where known, as a dessert apple. Good bearer.
20	?	.....	Popular in some sections. Not extensively tested in Maine.—Recommended by those who have tried it.
21	†	†	Excellent, but not productive enough to be recommended. Extensively tried, yet not popular when profit is the test.
22	r.	r.	This is not the English Russet of the books. Good grower—productive. Quality hardly "good."
23	r.	r.	A valuable late keeper. Not so large as Roxbury Russet, but succeeds on soils where that fails.
24	r.	r.	Very hardy. When well grown, one of the best selling apples raised.
25	r.	r.	Supposed to be identical with Harvey. A fine fruit. Succeeds well in Northern Oxford and in Franklin.
26	.....	?

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
27	Fall Jenneting.....	l.	v. g.	M.	A.	h. r.
28	Foundling	m.	g.	D.	A.	.....
29	Franklin Sweet	l.	b.	F.	A.	.....
30	Garden Royal	s.	b.	D.	A.	.....
31	Gloria Mundi.....	l.	v. g.	D. M.	A.	.....
32	Golden Ball.....	l.	g.	C. M.	E. W.	†
33	Gravenstein.....	m. to l.	b.	D. M.	A.	h. r.
34	Granite Beauty	l.	v. g.	M.	W.	.....
35	Hightop Sweet.....	s.	v. g.	F.	A.	r.
36	Hoyt Sweet	m.	b.	F.	W.	.....
37	Hubbardston Nonsuch.....	m.	b.	F. M.	E. W.	h. r.
38	Hurlbut.....	m.	v. g.	M.	W.	.....
39	Jewett's Fino Red..... <i>Nothead.</i>	s.	b.	D.	L. A.	r.
40	Jefferis	m.	v. g.	D.	A.	.....
41	Jonathan	m.	v. g.	D.	W.	.....
42	Kilham Hill.....	m.	g.	M.	W.	.....
43	King of Tompkins County	l.	b.	M.	W.	r.
44	King Sweeting.....	m.	b.	F.	S.	h. r.
45	Large Yellow Bough..... <i>Sweet Bough.</i>	l.	g.	M.	S.	.....
46	Loudon Pippin	l.	g.	M.	W.	?
47	Maiden's Blush	m.	g.	M.	A.	.....
48	Minister.....	m.	v. g.	D. M.	W.	r.
49	Milding.....	l.	v. g.	M.	W.	.....
50	Moses Wood.....	m.	v. g.	C. D.	E. A.	.....
51	Mother	m.	b.	D.	E. W.	.....
52	Mountain Sweet	m.	g.	M.	W.	.....
53	Munson Sweet.....	.....	g.	D. M.	.....	h. r.

APPLES—Continued.

Number.	Central Division.	Southern Division.	REMARKS.
27	?	.....	Quite extensively introduced with early importations of New York nursery stock. [Condemned in Androscoggin County.]
28	?	?	
29	r.	r.	An excellent sweet apple for family use.
30	r.	r.	Can hardly be recommended for general cultivation. Too small for market.
31	h. r.	.....	Not that of the books. Extensively grown in the central part of the State, and wherever grown is a popular apple.
32	†	r.	Two or more varieties are grown in the State under this name. The one here described is the true Golden Ball of Downing. An early and annual bearer; tree vigorous and hardy. The description in the first catalogue was erroneous.
33	h. r.	h. r.	Reported a shy bearer in Piscataquis. Heads the list of fall fruits. A heavy bearer in Androscoggin County.
34	?	?	Not extensively introduced. (See page 128.)
35	r.	h. r.	
36	?	?	An excellent winter sweet apple.
37	h. r.	h. r.	
38	r.	r.	
39	r.	r.	Under high cultivation profitable—otherwise fruit imperfect.
40	.....	?	Not extensively grown in this State.
41	.....	?	Excellent dessert apple. Not much grown in this State.
42	†	†	Not generally popular.
43	?	?	Is not fully proved. With many does not prove desirable. Shy bearer in Western Kennebec. Good bearer in Androscog'n Co.
44	h. r.	h. r.	Origin, Sidney, Maine. Valuable for family use.
45	r.	r.	Valuable chiefly because so early. When fully ripe quality "very good."
46			
47	†	.....	A very handsome apple.
48	r.	r.	An early, great, and continuous bearer.
49	?	.....	A new variety from New Hampshire. Promises well.
50	r.	r.	
51	r.	r.	A choice dessert apple. Tree considered a little tender and short lived, though Cole calls it perfectly hardy.
52	r.	.....	A new variety. Origin, Greene, Me. Promising.
53	.....	.....	Hardy. A very great bearer.

CATALOGUE OF

Number.	NAME.	Size.	Quality.	Use.	Season.	Northern Division.
54	Naked-limbed Greening.....	m.	g.	M.	W.	h. r.
55	Northern Spy	l.	b.	M. D.	W.	h. r.
56	Orange Sweet.....	m.	v. g.	M.	A.	r.
57	Peck's Pleasant.....	m.	v. g.	D.	W.	.....
58	Porter.....	m.	v. g.	M.	A.	r.
59	President	l.	g.	D. M.	A.	.....
60	Primate.....	m.	b.	D.	S.	.....
61	Pumpkin Sweet	l.	b.	F.	L. A.	r.
62	Rambo.....	m.	v. g.	M.	W.	.....
63	Red Astrachan.....	m.	g.	F. M.	S.	h. r.
64	Red Canada	m.	v. g.	D. M.	W.	†
	<i>Old Nonsuch.</i>					
65	Ribston Pippin	m.	v. g.	D. M.	W.	r.
66	Rhode Island Greening.....	l.	b.	M.	W.	†
67	Roxbury Russet	m.	g.	M.	Sp.	†
68	Sarah	l.	g.	C.	A.	r.
69	Sops of Wine	m.	g.	M.	S.	r.
	<i>Bell's Early.</i>					
70	Somerset.....	l.	b.	D. M.	A.	h. r.
71	Starkey.....	m.	b.	D. M.	E. W.	.....
72	Superb Sweet	m.	b.	D. M.	A.	.....
73	Sweet Russet.....	l.	v. g.	F. M.	E. W.	.....
74	Sweet and Sour	l.	v. g.	F.	W.	.....
75	Swaar	l.	v. g.	D. M.	W.	?
76	Summer Sweet Paradise	l.	v. g.	F. M.	E. A.	.....
77	Talman's Sweet.....	m.	v. g.	F. M.	W.	h. r.
78	Tetofsky	s.	p. ?	D.	S.	h. r.
79	Thompson	m.	v. g.	M.	E. A.	†

APPLES—Continued.

Number.	Central Division.	Southern Division.	REMARKS.
54	h. r.	....	Grown extensively in Waldo county.
55	h. r.	h. r.	Slow to come into bearing, but when it does, under high cultivation, proves desirable.
56	r.	.....	Highly recommended by many.
57	?	?	
58	h. r.	h. r.	
59	r.	r.	Second only to Gravenstein. Tree perfectly hardy and a heavy and annual bearer.
60	r.	r.	
61	h. r.	h. r.	Good for baking,—very sweet. Also good market apple. Succeeds well in portions of Northern Division.
62	?	?	Popular in the West. A good bearer, but too small for profit.
63	h. r.	h. r.	Popular everywhere. Quite tart unless fully ripe.
64	†	†	Not as profitable as many other newer varieties.
65	†	†	Not universally profitable. In some localities proves a good bearer. A poor bearer in Western Kennebec.
66	h. r.	h. r.	
67	r.	r.	Cannot be generally recommended for all localities. On soils adapted to it, proves one of the most profitable. On other soils it is a very poor bearer. Needs high cultivation.
68	.....	.....	Native of Wilton. Great bearer.
69	r.	r.	Extensively grown under the synonym. Hardy, productive and profitable. Tree a poor grower in Western Kennebec.
70	h. r.	h. r.	Native of Mercer. Showy. Fruit every way valuable. Said by some to drop badly.
71	h. r.	?	Native of Vassalboro', where it is extensively grown and called one of the most profitable. Quality among the best.
72	r.	.....	An excellent apple, though not extensively grown.
73	?	?	There are many kinds grown under this name, with nothing to recommend them but their late keeping and their exceeding sweetness. This variety is large and has much to recommend it as an early winter sweet apple. Good for baking.
74	.....	.....	This variety grows with sections of sweet alternating with sour. Choice for dessert. Grown chiefly as a curiosity.
75	?	?	
76	?	.....	An old variety. A desirable early sweet apple. Not widely grown.
77	h. r.	h. r.	More extensively grown than any other winter sweet apple. Tree hardy, prolific.
78	r.	r.	Tree hardy everywhere.
79	†	†	A good fruit. Tree not a free grower nor abundant bearer, except in special localities.

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
80	Twenty Ounce..... <i>Cayuga Red Streak,</i>	l.	p.	C.	L. A.	†
81	Wagener.....	m.	g.	M.	W.	.....
82	Williams' Favorite.....	l.	g.	M.	S.	h. r.
83	Winthrop Greening.....	l.	b.	F. M.	A.	h. r.
84	Winter White	l.	g.	M.	W.	?
85	Yellow Bellflower.....	m.	b.	D. M.	W.	h. r.
86	Yellow Newtown Pippin.....	m.	b.	D.	W.	.....

APPLES—Concluded.

Number.	Central Division.	Southern Division.	REMARKS.
80	†	†	Large, coarse, acid, not rich.
81	?	?	A poor grower in Western Kennebec; overbears.
82	h. r.	h. r.	Succeeds well in portions of Northern Division. Very large, free grower and good bearer.
83	r.	r.	One of our best native varieties. Desirable in many respects.
84	†	†	An old variety introduced by Mr. Vaughn. Grown to some extent in Kennebec, where some speak highly of it. It is not recommended over some newer varieties.
85	r.	r.	Hardy, giving good satisfaction in many localities. On favorable soils an abundant bearer, when it is crisp, juicy and rich. When not well grown, quality as inferior as its size.
86	?	?	Not extensively grown. In some instances proving well. Quality poor in Western Kennebec; does not ripen well.

II—PEARS.

The columns explain as follows: "Size"—s, small; m., medium; l., large. "Form"—p., pyriform; ob. p., obtuse pyriform; ob. o. p., oblong obtuse pyriform; r., roundish; r. ob., roundish obtuse. "Color"—y. g., yellowish green; y. g. r., yellowish green with red cheek; y. r., yellow russet; y., yellow. "Quality"—g., good; v. g., very good; b., best. "Use"—F., family; F. M., family and market; M., market; K., kitchen. "Season"—S, summer; A., autumn; E. A., early autumn; L. A., late autumn; W., winter. The letter q affixed to the name of a variety indicates that it is adapted to be grown on the quince stock.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bartlett.....	l.	ob. o. p.	y.	v. g.	F. M.	E. A.
2	Belle Lucrative, q.....	m.	r. o. p.	y. g.	b.	F.	E. A.
3	Beurre Bosc.....	l.	p.	y. r.	b.	F. M.	L. A.
4	Beurre Clairgeau.....	l.	p.	y. r.	g.	M.	L. A.
5	Beurre d'Anjou, q.....	l.	ob. p.	y. g. r.	b.	F. M.	L. A.
6	Beurre Diel, q.....	l.	r. ob. p.	y. r.	v. g.	F. M.	L. A.
7	Beurre Giffard, q.....	m.	p.	y. g.	v. g.	F. M.	S.
8	Beurre Superfin, q.....	m.	r. p.	y. r.	v. g.	F.	A.
9	Beurre Hardy, q.....	l.	ob. p.	y. g.	g.	F. M.	A.
10	Clapp's Favorite, q....	l.	ob. o. p.	y. g. r.	g.	F. M.	E. A.
11	Dearborn's Seedling...	s.	r. p.	y.	v. g.	F. M.	E. A.
12	Doyenne d'Ete.....	s.	r. o. p.	y. g. r.	v. g.	F.	S.
13	Duchess d'Angouleme, q.,	l.	ob. o. p.	y.	v. g.	F. M.	L. A.
14	Eastern Belle.....	m.	r. o. p.	y.	b.	F.	A.
15	Fulton.....	s.	r. ob.	y. r.	b.	F. M.	A.
16	Glout Moreceau, q.....	l.	ob. p.	y.	g.	.....	L. A.
17	Goodale.....	l.	ob. o. p.	y. g.	v. g.	F. M.	A.
18	Howell, q.....	l.	r. p.	y. g.	v. g.	F. M.	A.
19	Lawrence.....	m.	r. o. p.	y. g. r.	v. g.	F.	W.
20	Louise Bonne de Jersey, q	l.	ob. p.	y. g.	v. g.	F. M.	A.
21	Manning's Elizabeth....	s.	ob. p.	y. r.	v. g.	F.	S.
22	Rostiezer.....	s.	p.	y. g. r.	b.	F.	E. A.
23	Sheldon.....	m.	r.	y. r.	b.	F. M.	A.
24	Urbaniste.....	m.	p.	y. g.	v. g.	F. M.	L. A.
25	Vicar of Winkfield, q...	l.	p.	y. g.	p.	K. M.	W.
26	Winter Nelis.....	s.	ob. p.	y. r.	b.	F.	W.

REMARKS ON THE LIST OF PEARS.

Nos. 10, 11, 14, 15, 17, 18, 19 and 23, are of American origin; the others foreign. Nos. 14, 15 and 17 are natives of Maine.

No. 1—*Bartlett*. Tree somewhat tender, and hence liable to injury from sudden changes of temperature in winter.

No. 2—*Belle Lucrative*. One of the best at its season as a single variety for home use.

No. 3—*Beurre Bosc*. Tree vigorous and a regular bearer. Fruit generally perfect and of uniform size and high color.

No. 4—*Beurre Clairgeau*. Succeeds best on light, warm soils. Forms a fine, thrifty tree, and bears early. Valuable for market.

No. 5—*Beurre d'Anjou*. In some localities bears lightly,—otherwise nearly faultless, both in tree and fruit. A poor bearer in Western Kennebec.

No. 6—*Beurre Diel*. First rate in every respect in favorable situations; but on young trees and in cold soils the fruit is apt to be coarse and astringent.

No. 7—*Beurre Giffard*. Tree of moderate growth, spreading, slender. Like all early pears, this should be gathered before fully ripe, otherwise it is liable to lack quality, and decay at the core.

No. 8—*Beurre Superfin*. Trees very healthy—inclined to be thorny. Not an early bearer.

No. 9—*Beurre Hardy*. Trees remarkably vigorous.

No. 10—*Clapp's Favorite*. Fruit showy and attractive. Tree a vigorous grower. Very popular.

No. 11—*Dearborn's Seedling*. Regular and abundant bearer. Fruit sweet and sprightly in flavor.

No. 12—*Doyenne d' Ete*. Must be gathered before fully ripe.

No. 13—*Duchess d' Angouleme*. Gives its best fruit on quince stock, with garden culture.

No. 14—*Eastern Belle*. Originated at Bangor. Tree hardy and vigorous. Fruit large and of excellent quality.

No. 15—*Fulton*. Should be grafted into vigorous trees.

No. 16—*Glout Morceau*. Tree of spreading habit. Unreliable in heavy soils.

No. 17—*Goodale*. Very vigorous and productive; fruit having a short stem, is liable to blow off.

No. 18—*Howell*. Tree hardy, and an upright and free grower.

No. 19—*Lawrence*. Succeeds in more sandy soils than most pears.

No. 20—*Louise Bonne de Jersey*. As No. 13.

No. 21—*Manning's Elizabeth*. A beautiful dessert fruit; desirable for amateurs; very productive; growth moderate.

No. 22—*Rostiezer*. Tree vigorous, but of irregular and straggly growth.

No. 23—*Sheldon*. Tree vigorous, hardy and a good bearer; quality fine.

No. 24—*Urbaniste*. Of slow growth on quince, but when grown is one of the best in quality, and most permanent and productive.

No. 25—*Vicar of Winkfield*. The best cooking pear. When of large size, by suitable thinning, and ripened yellow, is good for eating.

No. 26—*Winter Nelis*. Should be grafted into vigorous trees.

III—QUINCES.

Angers. Fruit very large, oblate pyriform, yellowish, tender. This variety is grown and known chiefly as a stock for dwarf pears.

Apple or Orange. Fruit large, roundish, yellowish green, half tender. Valuable for home use or in market, for preserves, &c.

IV—PLUMS.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—r., roundish; o., oval; r. o., roundish oval; o. ob., oval obovate. "Color"—p., purplish or very dark; r., reddish or copper color; y., yellow; g. y., greenish yellow; y. r., yellowish with shades or spots of red. "Quality"—g., good; v. g., very good; b., best. "Use"—F., family; M., market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bavay's Green Gage.... <i>Reine Claude de Bavay.</i>	l.	r.	g. y.	b.	F.	L.
2	Bleeker's Gage.	m.	r. o.	y.	v. g.	F. M.	M.
3	Bradshaw.	l.	o. ob.	r. p.	g.	M.	M.
4	Coe's Golden Drop.....	l.	o.	y. r.	v. g.	F. M.	L.
5	Coe's Late Red.....	m.	r.	p.	v. g.	F. M.	L.
6	Columbia.....	l.	r.	p.	g.	M.	M.
7	Damson.....	s.	o.	p.	g.	M.	L.
8	Duane's Purple.....	l.	o.	r. p.	g.	F. M.	E.
9	Green Gage.....	s.	r.	g. y.	b.	F.	M.
10	Huling's Superb.....	l.	r. o.	g. y.	g.	F. M.	M.
11	Imperial Gage.....	l.	o.	g. y.	b.	F. M.	M.
12	Jefferson.....	l.	o.	y. r.	b.	F. M.	M.
13	Lombard.....	m.	r. o.	r. p.	g.	M.	M.
14	McLaughlin.....	l.	r.	y. r.	b.	F. M.	M.
15	Purple Gage.....	m.	r.	p.	v. g.	F. M.	M.
16	Smith's Orleans.....	l.	o.	r. p.	v. g.	F. M.	M.
17	Washington.....	l.	r. o.	g. y.	v. g.	F. M.	E.
18	Yellow Egg <i>White Magnum Bonum.</i>	l.	o.	y.	g.	F. M.	M.

V—CHERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—ob. h., obtuse heart shape; r. ob. h., roundish obtuse heart shape; r. h., roundish heart shape; r., roundish or round. "Color"—l. r., lively bright red; d. r., red, almost black; a. m., amber mottled with red; y. r., yellow ground shaded with red. "Class"—H., Hearts, or tender fleshed sweet cherries; B., Bigarreau, or firm fleshed; D., Dukes, having a character in tree and fruit midway between the Hearts and Morellos; M., Morellos, having acid fruit, and the trees of small, slender growth. "Use"—F., family, for dessert; F. M., family or market; K. M., cooking or market; M., market. "Season"—E., early; M., medium; L., late. For general descriptions see pages 78-81.

Number.	NAMES.	Size.	Form.	Color.	Class.	Use.	Season.
1	Belle de Choisy.....	m.	r.	a. m.	D.	F.	E. M.
2	Belle Magnifique.....	l.	r. h.	l. r.	D.	K. M.	L.
3	Black Heart.....	l.	r. h.	d. r.	H.	F. M.	M.
4	Black Tartarian.....	l.	r. h.	d. r.	H.	F. M.	M.
5	Coe's Transparent.....	m.	r.	a. m.	H.	F.	M.
6	Early Purple Guigne....	m.	r. h.	d. r.	H.	F. M.	E.
7	Early Richmond.....	s.	r.	l. r.	M.	K. M.	E.
8	Elton.....	l.	r. h.	y. r.	B.	F. M.	M.
9	Governor Wood.....	l.	r. h.	y. r.	H.	F. M.	M.
10	Lato Duke.....	l.	ob. h.	d. r.	D.	K. M.	L.
11	Louis Philippe.....	l.	r.	d. r.	D.	K. M.	L.
12	May Duke.....	l.	r. ob. h.	d. r.	D.	K. M.	E.
13	Morello.....	l.	r. h.	d. r.	M.	K. M.	L.
14	Napoleon.....	l.	r. ob. h.	y. r.	B.	F. M.	M.
15	Reine Hortense.....	l.	r.	l. r.	D.	F. M.	L.

VI—NATIVE GRAPES.

ABBREVIATIONS: "Size"—with reference to the berry, l., large; m., medium; s., small. "Form"—with reference to bunch and berry, s. r., short bunch, round berry; l. r., large and round; m. r. o., medium bunch, roundish oval berry; m. r., medium bunch, round berry. "Color"(when fully ripe)—b., black, or nearly so; r., reddish; g., greenish white or yellowish. "Quality"—p., poor; g., good; v. g., very good; b., best. "Use"—T., table; M., market; W., wine.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Allen's Hybrid	l.	l. r.	g.	v. g.	T. M.	M.
2	Agawam	l.	s. r. o.	r.	v. g.	.....	M.
	Rogers' No. 15.						
3	Clinton	s.	m. r.	b.	p.	T. W.	L.
4	Concord	l.	l. r.	b.	g.	T. M. W.	M.
5	Creveling	m.	m. r. o.	b.	v. g.	T.	E.
6	Delaware	s.	s. r.	r.	b.	T. M. W.	E.
7	Diana	m.	s. r. o.	r.	v. g.	T. M.	L.
8	Eumelan	m.	r.	b.	g.	T.	M.
9	Hartford Prolific	l.	m. r. o.	b.	g.	M.	E.
10	Iona	m.	m. r. o.	r.	b.	T. M. W.	L.
11	Isabella	l.	m. r. o.	b.	g.	T. M.	L.
12	Lindley	m.	m. r. o.	r.	v. g.	T.	M.
	Rogers' No. 9.						
13	Merrimack	l.	s. r.	b.	v. g.	M.	M.
	Rogers' No. 19.						
14	Moore's Early	l.	l. r.	b.	g.	T. M. W.	E.
15	Pocklington	l.	l. r.	g.	g.	T. M.	M.
16	Rebecca	m.	s. r.	g.	v. g.	T.	M.
17	Salem	l.	r.	p.	g.	M.	M.
	Rogers' No. 22.						
18	Telegraph	l.	m. r. o.	b.	v. g.	T. M.	E.
	Christine.						
19	Wilder	l.	l. r.	b.	v. g.	T. M.	M.
	Rogers' No. 4.						
20	Worden	l.	l. r.	b.	g.	T. M. W.	E.

REMARKS ON THE LIST OF GRAPES.

No 1—*Allen's Hybrid*. A luxuriant grower and abundant bearer, and when well ripened one of the most delicious varieties of the Sweetwater class; but rather too late to be recommended for general culture in this State.

No. 2—*Agawam*. Very handsome, and a good keeping variety. Flavor rich, spicy and good.

No. 3—*Clinton*. Fruit small, late and harsh. Valuable only for wine. Vine hardy. Not recommended.

No. 4—*Concord*. A free grower, and bears heavily, but does not generally mature its fruit in this State.

No. 5—*Creveling*. Of excellent quality, not rich, but entirely free from foxiness. Mildews badly in some localities.

No. 6—*Delaware*. Bunch and berry small, and not a good keeper, but in all other respects one of the most desirable varieties for general cultivation. Vine healthy and hardy, and an early and constant bearer. Requires rich soil and high culture.

No. 7—*Diana*. Rather late for Maine, but of fine quality, and the best keeping variety.

No. 8—*Eumelan*. Has not given satisfaction in this State.

No. 9—*Hartford Prolific*. Early, hardy, vigorous and productive, but fruit ripens unevenly and drops from the bunch.

No. 10—*Iona*. Of high flavor and a good keeper, but too late for general cultivation in Maine. Requires rich, warm soil. Vine and foliage healthy.

No. 11—*Isabella*. An old, standard variety. Largely superseded by earlier and better sorts. A free grower, and hardy.

No. 12—*Lindley*. One of the earliest and best of Rogers' hybrids. Bunch and berry handsome. Of good quality and excellent keeper.

No. 13—*Merrimack*. Ripens uniformly and well, and gives general satisfaction. Vigorous and productive.

No. 14. *Moore's Early*. Seedling of Concord, which it closely resembles, but ripens a week or ten days earlier.

No. 15. *Pocklington*. Strong grower, hardy, free from mildew; very promising.

No. 16—*Rebecca*. Of fine flavor and keeps well. Of slender growth and tender when young, but a healthy grower when established.

No. 17—*Salem*. Not as reliable in this State as the other well known varieties of the same class. Foliage liable to mildew. Flavor rich, aromatic and sweet. Needs further trial.

No. 18—*Telegraph*. Not much known in this State, but highly recommended elsewhere for earliness and general good qualities.

No. 19—*Wilder*. Vigorous. Foliage strong and healthy. Requires a strong, rich soil. A reliable and valuable variety but a little later than some others of its class.

No. 20. *Worden*. Similar to Concord, but of better quality, earlier and less liable to rot.

VII—FOREIGN GRAPES.

The catalogue of the American Pomological Society contains thirty-three varieties of foreign grapes, nearly all of which, with many others, are grown in this State; and being cultivated exclusively under glass they are exempt from the variations induced by climate and soil, and therefore equally adapted to all localities. The description embraces color, flavor, season, and the character of the vinery—whether hot or cold—in which they may be grown. It is not perceived that the insertion of such a list will be of material service to cultivators of this class of grapes, the information which it would contain being within their reach in other forms; hence it is omitted.

VIII—BLACKBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—ob. c., oblong conic; ov., oval; ob. ov., oblong oval. "Quality"—v. g., very good; b., best. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Quality.	Season.
1	Snyder	m.	ob. o.	b.	M.
2	Agawam.....	m.	.....	b.	M.

1, Hardy and productive. 2, Hardy, productive and sweet.

IX—CURRANTS.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form of bunch"—m., medium; s., short; l., long. "Color"—r., red; b., black; w., white. "Quality"—a., acid; m. a., moderately acid; v. a., very acid. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form of Bunch.	Color.	Quality.	Season.
1	Black Naples.....	l.	s.	b.	m. a.	M.
2	Black Grape. <i>Ogden's Black</i>	l.	m.	b.	m. a.	M.
3	Cherry.....	l.	s.	r.	v. a.	M.
4	Fay's Prolific.....	l.	l.	r.	a.	M.
5	Imperial Red.....	l.	s.	r.	a.	M.
6	La Versailles.....	l.	s.	r.	a.	M.
7	White Grape.....	m.	m.	w.	m. a.	E.

2 Resembles Black Naples, but more vigorous and productive; fruit larger and of better quality. 3, Shy bearer, and very sour. 5, Generally supposed to be identical with No. 6; but inserted by vote of the Society (p. 103) for further investigation. 7, The best white currant.

X—GOOSEBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—o., oval; r. o., roundish oval. "Color"—r., reddish; g., greenish yellow. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality	Season.
1	Downing	m.	r. o.	g.	v. g.	M. L.
2	Houghton	s.	r. o.	r.	g.	E.

1 Of upright habit, productive, desirable. 2 Drooping, vigorous.

XI—RASPBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—r., roundish; c., conical; ob. c., obtuse conical. "Color"—r., reddish; p., purplish; y, yellow; b., black. "Quality"—g., good; v. g., very good; b., best. "Use"—M., market; F. M., family and market. "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Clarke	m.	r.	r.	v. g.	F. M.	E.
2	Cuthbert	l.	ob. c.	.....	.....	F. M.	L.
3	Davison's Thornless	m.	r.	b.	g.	F. M.	E.
4	Golden Thornless	m.	r.	y.	g.	F.	M.
5	Gregg	l.	r.	blk.	g.	F. M.	L.
6	Knevett's Giant	l.	ob. c.	r.	b.	F.	M.
7	McCormick	m.	ob. c.	b.	v. g.	F. M.	L.
	<i>Mammoth Cluster.</i>						
8	Orange. <i>Brinckle's Orange</i>	l.	o.	y.	b.	F.	M.
9	Shaffer's Colossal	l.	o.	purple.	g.	M.	L.
10	Turner	m.	r.	r.	v. g.	F. M.	E.

1. Canes strong, vigorous and upright; more nearly hardy than any foreign kind; fruit rather soft, juicy, sweet and excellent; better for light soils than any other variety of its class. 6, Strong grower and very productive. 8, Fruit tender; valuable for family use. 7, Profitable for market.

XII—STRAWBERRIES.

ABBREVIATIONS: "Size"—l., large. "Form"—o. c., obtuse conical; r. c., roundish conical; r. o. c., roundish obtuse conical. "Color"—b. s., bright scarlet; l. c., light crimson; d. c., deep crimson. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

No	NAMES.	Size.	Form.	Color.	Quality.	Season.
1	Bidwell	m. to l.	long.	b. s.	v. g.	M.
2	Crescent Seedling	m.	r. c.	l. c.	g.	M.
3	Cumberland Triumph	m. to l.	r. o.	l. c.	v. g.	M.
4	Charles Downing	m. to l.	r. o. c.	b. s.	v. g.	M.
5	Glendale	m. to l.	o. c.	b. s.	v. g.	L.
6	Kentucky Seedling	l.	r. o. c.	l. c.	v. g.	L.
7	Manchester	l.	r. o. c.	b. s.	v. g.	M. to L.
8	Sharpless	l.	irregular	l. c.	v. g.	M.
9	Wilson's Albany	l.	r. c.	d. c.	g.	E. to L.

1, Has the objection of having light tips. 2, A pistillate variety; very productive; quality better than the Wilson. 3, One of the best for family use. 4, Quality very good; rusts badly. 5, Very high flavored and productive. 6, One of the best late varieties in quality. 7, Pistillate; matures its fruit well. 8, A popular sort; fruit very large; requires hill culture. 9, Of fair quality when fully ripe.

GEO. B. SAWYER, *Treasurer*,

IN ACCOUNT WITH MAINE STATE POMOLOGICAL SOCIETY.

DR.

To cash in treasury January 1, 1885.....	\$85 50	
" amount rec'd from Oakland National Bank, on temporary loan.....	300 00	
" " from the State, bounty for 1884	500 00	
" " of life members.....	40 00	
" " " annual members.....	59 00	
" " " State Agricultural Society.....	425 00	
" " for interest on Permanent Fund	17 20	
" " " " extra dividend of Wiscasset Savings Bank.....	22 36	
		<u>\$1,449 06</u>

CR.

By amount paid orders of Executive Committee	\$251 13	
" " on account of Secretary's salary.	75 00	
" " loan at Oakland National Bank.....	300 00	
" " interest on loans	15 15	
" " balance premiums of 1884.....	441 00	
" " on account of premiums of 1885.....	354 00	
		<u>\$1,436 28</u>
Balance cash in treasury December 31, 1885.....	12 78	
		<u>\$1,449 06</u>

STATEMENT OF THE FINANCIAL CONDITION OF THE SOCIETY,
DECEMBER 31, 1885.

ASSETS.

Amount due from State, bounty for 1885	\$500 00	
Cash in the treasury	11 78	
Property owned by the Society, estimated	150 00	
Amount on deposit to credit of Permanent Fund.....	344 40	
		<u>\$1,006 18</u>

LIABILITIES.

Amount due on loan	\$200 00	
" " premiums of 1885	354 00	
" " unpaid orders..... (nothing)		
" " salary of Secretary and Treasurer, 1885.....	25 00	
" " bills not rendered, or for which orders have not been drawn, estimated	100 00	
		<u>\$679 00</u>

PERMANENT FUND.

Cr. By fees of 82 life members	\$820 00	
Dr. To amount on deposit to credit of Fund.....	344 40	
		<u>\$475 60</u>
Balance due Fund.....		\$475 60

Respectfully submitted.

GEO. B. SAWYER, *Treasurer*.

WISCASSET, Feb. 15, 1886.

MEMBERS OF THE SOCIETY.

NOTE—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full Christian names where initials only are given.

LIFE MEMBERS.

Andrews, A. Emery.....	Gardiner	*Hersey, T. C	Portland
*Atherton, H. N.	Hallowell	Hopkins, Miss S. M.....	Gardiner
Atherton, W. P.....	"	Hoxie, James S.....	North Fairfield
Atkins, Charles G	Bucksport	Ingalls, Henry	Wiscasset
Atwood, Fred	Winterport	*Jewett, George.....	Portland
Bennoch, John E.....	Orono	Johnson, Isaac A	Auburn
Briggs, D. J.....	South Turner	Jordan, Francis C.....	Brunswick
Briggs, John.....	Turner	Knowlton, D. H	Farmington
Burr, John.....	Freeport	Low, Elijah	Bangor
Carter, Otis L.....	Etna	Low, S. S	"
Chase, Henry M.....	North Yarmouth	Lapham, E. A.....	Pittston
Chase, Martin V. B	Augusta	McLaughlin, Henry	Bangor
*Clark, Eliphalet.....	Portland	*Metcalf, M. J	Monmouth
Cole, Horatio G	Boston	Moore, William G.....	"
Crafts, Moses.....	Auburn	Moor, F. A.....	Waterville
*Crosby, William C	Bangor	Morton, J. A	Bethel
Dana, Woodbury S	Portland	Morton, William E.....	Portland
DeRocher, Peter.....	Waterville	*Noyes, Albert	Bangor
Dirwanger, Joseph A.....	Portland	Perley, Chas. I....	Seward's (Vassalboro')
Dunham, W. W.....	North Paris	Pope, Charles S	Manchester
Dyer, Milton	Cape Elizabeth	Pulsifer, D. W.....	Poland
*Emerson, Albert	Bangor	*Richards, F. G.....	Gardiner
Farnsworth, B. B.....	Portland	Richards, John T.....	"
Frost, Oscar F.....	Monmouth	Ricker, A. S.....	Turner
Gardiner, Robert H.....	Gardiner	*Richardson, J. M	Gardiner
Gilbert, Z. A.....	North Greene	Roak, George M.....	Auburn
*Godfrey, John E.....	Bangor	Robinson, Henry A	Foxcroft
Hanscom, John.....	Saco	Rolfe, Samuel.....	Portland
Harlow, S. C.....	Bangor	Sawyer, Andrew S.....	Cape Elizabeth
*Harris, N. C	Auburn	Sawyer, George B.....	Wiscasset
Harris, N. W.....	"	Shaw, Stillman W.....	Minot
Harris, William M.....	"	Simmons, H. J. A	Waldoboro'

*Deceased.

LIFE MEMBERS—CONCLUDED.

*Smith, Alfred.....	Monmouth	Thomas, William W., Jr.....	Portland
Smith, Henry S.....	"	Tilton, William S.....	Chelsea
Starrett, L. F.....	Warren	True, Davis P.....	Leeds Center
*Stetson, Isaiah.....	Bangor	Varney, James A.....	Oregon
Stilphen, Asbury C.....	Gardiner	Vickery, James.....	Portland
Stanley, Charles.....	Winthrop	Vickery, John.....	Auburn
Stanley, O. E.....	"	Wade, Patrick.....	Portland
Strout, S. F.....	West Falmouth	*Weston, James C.....	Bangor
Strattard, Mrs. A. B.....	Monroe	Wharff, Charles S.....	Gardiner
Sweetser, S. R.....	Cumberland Center	Whitney, Edward K.....	Harrison
*Taylor, Joseph.....	Belgrade	Woodman, George W.....	Portland

*Deceased.

ANNUAL MEMBERS, 1885.

Abbott, Lyman F.....	Lewiston	Hosman, George H.....	Auburn
Ayer, Daniel.....	N. Vassalboro'	Harmon, G. H.....	"
Allen, B. E.....	North Greene	Huff, A. B.....	Readfield Depot
Allen, Nelson S.....	Dennysville	Hoyt, Mrs. F.....	Winthrop
Blossom, Leander H.....	Turner Centre	Jordan, Alice M.....	Auburn
Berry, L. M.....	Winthrop	Kenniston, E. H.....	Simpson's Corner
Blossom, G. W.....	Turner	Litchfield, L. K.....	Winthrop
Boardman, Samuel L.....	Augusta	Leach, H. T.....	E. Monmouth
Baker, John C.....	Lewiston	Lombard, T. M.....	Auburn
Brown, Henry W.....	Newburg	Leavitt, Mrs. S. E.....	"
Bickford, L. I.....	Dixmont Centre	Merrill, T. M.....	West Gloucester
Bigelow, Hayden.....	Greene	Mitchell, E. L.....	Lewiston
Carpenter, James M.....	Pittston	Miller, Mrs. C. A.....	"
Colby, D. H.....	Lewiston	Nowell, Frank E.....	Fairfield
Cary, Henry S.....	Topsham	Nelson, O. C.....	New Gloucester
Cates, A. G.....	Auburn	Perkins, L. J.....	Deering
Chipman, J. C.....	West Gloucester	Penley, Arthur W.....	Auburn
Chipman, A. B.....	"	Pulsifer, Eben.....	South Auburn
Cook, S. W.....	Lewiston	Phaneuf, Mrs. M.....	Lewiston
Clifford, Mrs. A. T.....	Leeds Centre	Robie, S. P.....	Auburn
Dunton, John.....	Lewiston	Ring, Cora E.....	Richmond
Dunbar, E. W.....	Damariscotta	Staples, G. K.....	Temple
Espeonnet, Albert.....	Gardiner	Skillings, L.....	Lewiston
George, C. H.....	Hebron	Towle, J. J.....	Dixfield
Hoffes, Elmas.....	Warren	Thomas, Mrs. J. W.....	Rockland
Ham, Nolson.....	Lewiston	Whitmore, Thomas P.....	Bowdoinham
Hayes, L. B.....	"	Wharff, William R.....	Gardiner
Hackett, E. C.....	West Gloucester	Wright, Fred.....	Bath
Holbrook, C. D.....	N. Madison	Waterman, I. T.....	East Auburn
Hersom, A. J.....	Berwick	Whitney, E. K.....	Harrison

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